"Function and Form: Social and Technical Aspects of Prints made in Fifteenth Century Northern Europe, with special reference to Sealprints, Pasteprints, and Sealpasteprints."

——————— by ———————

Cynthia L. Bowman

VOLUME I

TEXT

A thesis presented in two volumes for
the degree of Doctor of Philosophy
Department of Fine Art
University of Glasgow
May 1982

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SUMMARY

This study asks the questions: how did prints function in fifteenth century Northern European society and how were different types of prints made. The research and conclusions are presented as a series of separate investigations. The first part of the thesis deals with the function of woodcut prints in secular and religious settings. Unusual examples of the use of woodcut prints as decoration and as daily utensils are given in Chapter One. The discussion in Chapter Two is concerned with the relationship between woodcut prints and "the cult of saints", a form of Christian worship popular in late medieval Europe. The imagery and use of woodcut prints of this period is closely integrated with various aspects resulting from devotion to these cults.

The second part of the thesis discusses types of prints made in fifteenth century Northern Europe. These vary from the most common forms, woodcut prints and engravings, to the more rare forms, metalcuts, flock-prints, and embroidery-prints. These are discussed in Chapter Three. A more expanded discussion continues in the following three chapters on prints known as sealprints, pasteprints, and sealpaste-prints. Chapter Four looks at the three known sealprints. These are discussed according to their iconography, a description of the print surfaces and materials, and likely methods of production based on their resemblance to other works of art and known methods practised in the fifteenth century.

Pasteprints, as a subject of study, present specific problems which do not occur in other types of prints. Many of these can be answered with the results from scientific

analyses. To date, very few analyses have been completed and, therefore, the study of pasteprints, which should be based to a large extent on these analyses, is still in its early stages of investigation and organization. A few of the problems discussed in Chapter Five, with regard to pasteprints, pertain to; how the matrices of these prints were made; why there are layered materials on the print surfaces; and, why does there appear to be more than one "type" of pasteprint. In accordance with the art historical approach followed in the rest of the thesis, information has been acquired by comparing similar types of objects made in the fifteenth century and methods of production practised during that period in Northern Europe. A catalogue, the first of its kind, having both physical descriptions of the prints, scientific analyses (when available), and colour photographs, follows Chapter Five. The last chapter, Chapter Six, discusses the three prints known as sealpasteprints and attempts to relate each of them to a fifteenth century production method and use.

Two appendices are provided at the end of the thesis. The first discusses, at some length, the technology of papermaking and its history, the production of paper, and the appreciation of paper with regard to prints. The second appendix describes an experiment in making paper reliefs from a fifteenth century clay mould discussed in Chapter Four.

As a contribution to previous research and knowledge, the thesis has a dual purpose. The first is to discuss the socio-historical importance of prints made in fifteenth century Northern Europe and the second is to cover previously ignored aspects of printmaking during this period. The material presented in it is intended to provide both an updated

approach to the subjects and encourage further interest and study of fifteenth century prints and printmaking techniques.

ABBREVIATIONS

* S. (number) is an abbreviation for the Schreiber number of a specific print. These numbers appear in the catalogues written by W.L. Schreiber, Manuel de L'Amateur de la Gravure sur Bois et sur Métal au XVe siecle, (Berlin, 1893), and Handbuch der Holz- und Metallschnitte des XV. Jahrhunderts, (Leipzig, 1926).
  Schreiber numbers in brackets ([ ]) refer to prints intended for publication in volume IX of the Handbuch which was never published.
* L. (number) is an abbreviation for the Lehrs number of a specific print. These numbers are found in a catalogue prepared by Max Lehrs, Geschichte und kritische Katalog des deutschen, niederländischen, und französischen Kupferstichs in XV. Jahrhundert, (Vienna, 1910).
* The Einblattdrücke des XV. Jahrhunderts, P. Heitz, ed., (Strasbourg, 1899-1942) is 100 volumes compiling all of the fifteenth century woodcut prints in both public and private collections in Europe and the United States. Each volume is numbered separately and has its own author and title. Therefore, reference to individual volumes in the text will appear in the following order: P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Volume, Title, Author, Date, and Plate Number.

INTRODUCTION

Single-sheet woodcut prints made during the fifteenth century in Northern Europe have been examined and described according to art historical characteristics which determine styles, dates, and localizations. These studies have provided a basis for further research. Rarely have single-sheet woodcut prints been discussed in the context of religious customs of the fifteenth century. In fact, one cannot fully appreciate the iconography of these prints unless one is aware of the religion of the period. This study ties together the imagery of woodcut prints with the fifteenth century religious system known as "the cult of saints". This form of religion was the combination of Christian dogma and liturgy with predominant aspects of traditional folklore which, more often than not, involved superstitious attitudes and a populace that was willing to believe in the more magical side of religion.

In the following study, it will appear quite obvious that emphasis has not been primarily placed on the standard art historical terms of reference. This allows the reader to assimilate and understand the socio-historical value of the prints within the context of their production and use. They should not be detached from the fifteenth century but viewed as a vital part of contemporary life. Art is, after all, the reflection of human behavior and it is the principal concern of this scholar to illustrate fifteenth century beliefs and customs with the use of fifteenth century woodcut prints.

Woodcut prints in the fifteenth century did, of course,

have their secular functions and uses. During the fifteenth century, woodcut prints showing religious images were pasted in the lids of boxes and some prints may even have functioned as an early form of wallpaper. The functions of prints as fine art objects and in the production of printed books define separate categories of investigation. This study makes note of these functions but is chiefly concerned with exploring lesser known uses of woodcut prints, and emphasizing the decorative uses and roles they played in everyday medieval life, such as toys and calendars.

There were several techniques in the fifteenth century employed for making images on paper and utilizing paper as a medium. It is necessary to have a basic understanding of the two most common printmaking techniques, woodcut and engraving, in order to appreciate the more unusual methods used briefly in the last part of the century (metalcuts, flockprints, embroidery-prints, sealprints, pasteprints, and sealpasteprints). Understanding the methods of printmaking also helps to explain specific visual and sometimes physical characteristics found in individual prints.

Certain rare prints from the fifteenth century, sealprints, pasteprints, and sealpasteprints, have, as yet, been inadequately explained with regard to their production and use. These questions were raised by art historians who commented on these prints in the early part of this century but they were never satisfactorily answered. In order to provide a reasonable and likely method of production in each instance, I have had to acquaint myself with a variety of production methods outside the immediate realm of printmaking. The technological comparisons I have suggested derive from my investigations into other fifteenth century art media. In

some instances, historical documentation, in the form of 'recipe' books or manuscripts, is available which brings us even closer to the actual processes used in the fifteenth century and provides an approximation as to how we think the prints were made.

There are three prints known as "sealprints". One, in the Metropolitan Museum of Art, was classified as a "print" because it appears to be an image on paper. But it was not made by any traditional printing method, that is, inking a matrix and pressing it onto a flat support such as paper, resulting in a two-dimensional design made from ink. This sealprint was made using paper as a casting material in a form of papier mâché. Papier mâché was a very popular material that was used to make large numbers of religious souvenir objects. It was also used to make small household furnishings such as small boxes. This period of papier mâché production (specifically the fifteenth century) is an area in which little art historical research has been undertaken.

Another sealprint, in The New York Public Library, was made using a similar process to that which was used to make the Metropolitan print. However, this print was made from layers of paper and not paper pulp as in the previous instance. It is a larger print and has a devotional inscription along the top edge, indicating that it was used as a kind of Andachtsbilder for prayer and meditation.

The third sealprint is in the Hunterian Art Gallery, Glasgow. My study shows that this print has virtually nothing to do with the previous two sealprints in terms of production and use. My proposal is that this embossed design in paper was a working "proof" made by a craftsman who was designing a matrix for bookbinding decoration known as "blind-stamped"

decoration. An unusual aspect of the print is what appears to be "over-drawing" on the surface in sepia ink. The reason for this is not known, but it may have been the result of a previous owner trying to re-capture the original design in the colourless paper relief.

The next category of rare prints, known as "pasteprints", was studied by several historians in the early part of this century. These early authors did not have the technical processes available today to chemically analyze these prints. This is extremely important as the "paste" on the print surfaces is actually composed of individual layers of materials. This observation was made in 1942 when three pasteprints were analyzed using what were then the most up-to-date methods of analysis. These reports were submitted for a contemporary interpretation to The National Gallery Scientific Department in London. It was suggested that the conclusions drawn at that time could very likely be altered today in light of the much greater knowledge of chemicals and materials used in the production of early artworks. Therefore, it is vital to have chemical analyses made on these prints and only the current techniques should be trusted with regard to any conclusions as to the composition of the paste.

Further questions raised with regard to pasteprints are, what method of production was used and what were they originally intended to look like? The method of production appears, to me, to have been taken from both two-dimensional printmaking techniques and from the production of low-relief designs intended to imitate textiles on the backs of altarpieces and on panels. Both methods utilize a matrix which is impressed in order to make the design. The latter method, however, presses the matrix into a thin sheet of a wax-based mixture,

similar in essence to that found on the surfaces of pasteprints. Both the textile imitation and the pasteprint were finished in a similar decorative manner, using gilding and coloured pigments. This approach towards the research of pasteprints provides a more plausible and, thus, useful contribution to the overall study because it is based on known fifteenth century procedures and relates the prints to similar types of objects made in that period.

We know that the imitation textile sheets were intended to reproduce the 'look' of popular fifteenth century brocades. It has been suggested, and I agree, that pasteprints, in their original form, were meant to look like expensive goldwork. I have proposed that the pasteprints intended to be sold to wealthy clientele are those which were made from real gold with hand-painted details on the surface. A second type of pasteprint, which covered a much broader section of the market, was made to look like the expensive versions, using substitute gold materials and printed effects to replace the hand-painted ones thus saving time in production. It should be kept in mind that, there is more than one type of pasteprint, which is obvious when they are compared visually to one another. Therefore, this proposal may only pertain to a certain group of pasteprints.

The last group of rare prints dealt with in this thesis, the sealpasteprints, were thought to have been made using a combination of the preceeding two techniques. In fact, they too are very distinct in their production methods. The Metropolitan sealpasteprint is made from a rough mixture of what may be a vegetable fibre and paper pulp. It was probably cast in a wood or stone matrix and then painted in a dark brown varnish-like substance. It may well have been intended

to imitate a low-relief plaque in bronze. Another sealpasteprint, in Washington, D.C., is more similar in appearance to pasteprints except that it has a much thicker layer of paste on the paper surface. It would seem that this sealpasteprint is probably much closer, in terms of production method, to that of pasteprints. The last sealpasteprint was, prior to World War II, in the Danzig State Library. It is a unique combination of low-relief lettering which forms the border around a printed, two-dimensional image.

The production of images and objects made from, or with, paper was dependent upon the increased availability of paper in fifteenth century Europe. For this reason, an appendix has been included in the thesis which examines: the historical development of papermaking technology; its introduction into Europe; early papermaking in Fabriano and Nürnberg; making paper; and, looking at paper with regard to early prints. A second appendix describes the technique used to make a relief in paper from the "Markle Plaque", a fifteenth century clay matrix discussed in Chapter Four.

When I first began my research, prompted by the presence of the Hunterian sealprint, I was unaware of the labyrinthine path ahead of me, especially as it led into the related categories of pasteprints and sealpasteprints. As a result of the complexities I encountered, requiring much more time than that prescribed by a Ph.D., I have had to limit my investigations and draw the most reasonable conclusions possible. Despite any limitations, the material contained in this study is the most recent and complete work to have been produced in many years. I feel certain that it provides a great deal of conclusive research and many ideas which I hope will encourage further study in the near future.

PART I. FUNCTION

CHAPTER ONE

WOODCUT PRINTS: DECORATIVE AND SOCIAL FUNCTIONS IN THE FIFTEENTH CENTURY.

After the introduction of cast type, in the 1450's, a distinct separation of function arose in the uses of woodcut prints and engravings. The woodcut print tended to be used along with printed text, thus making it a "partner" of the written word, increasing the text's precision by giving a definitive image of what otherwise might have been a variant interpretation of language. While the engraving was accepted as a fine art object in its own right, unaccompanied by the printed text, it was accepted for its intrinsic beauty and appreciated according to the technical handling of the medium by the artist. However, woodcut prints made by Albrecht Dürer, in the later part of the century, helped to break down this distinction in use, and by 1500, individual artists were known for their work both in woodcut prints and engravings.

The appreciation of woodcut prints as fine art objects and their use in the production of printed books define two separate categories of study. I do not intend to dwell on these areas but, instead, to point out a few of the more unusual and perhaps lesser known decorative and social uses of woodcut prints in fifteenth century Northern Europe. The first examples of decorative woodcut prints were chosen either because of their unusual function or because, from their appearance, they suggest a particularly interesting use. The second group of woodcut prints provide an insight into the life and customs of late medieval society in Northern Europe.

Woodcut prints as decoration.

One group of woodcut prints, used in a religious and at the same time decorative manner, are those which have been found adhered beneath the lids of small, portable boxes, or cofferets, made between 1480 and 1520 in Paris. At least thirty examples can be found in both European and American collections. Some of these boxes were used to collect alms and were either circulated within the congregation during the Mass, or else held by a clergy member outside the church door as a receptacle for offerings made by the congregation.(1) It was thought that, upon viewing the religious image portrayed on the open lid, laymen would be reminded of their devotion and responsibility, and make an offering to the church. Another use for the cofferets was as containers for important letters and documents. The construction of the cofferets made them ideal small strongboxes. The box itself was made of wood and covered with leather. Large decorative plates of iron and often bands of iron encircled the box structure (Fig. 1). Some of the cofferets have side loops made of iron, through which leather straps were laced, so that the case could be worn next to the chest or carried under the arm, a useful position when travelling on horseback. Because of their sturdiness, these small cofferets were used to hold costly manuscripts and early printed books. They could either be stored or carried safely when travelling. The Spencer Cofferet, shown open in Figure 2, probably held a manuscript. It has a woodcut print showing The Almighty Enthroned pasted underneath the lid (Fig. 3). This type of cofferet is shown in a painting by the Master of the "Annunciation" from Aix,

The Prophet Jeremiah (Figs. 4 and 5).

The subject matter of the woodcut prints found in these cofferets may yield additional information with regard to their use. Cofferets with pilgrim saints, such as, St. Roch and St. Christopher (the latter traditionally regarded as the protector of travellers), were used as dispatch boxes. Cofferets used to collect alms portray images of holy monks, such as, St. Francis and St. Anthony. While cofferets intended to hold manuscripts and books contain scenes from the Life of the Virgin and The Passion (Figs. 6 and 7).(2) Some of these boxes may even have served as portable altars. Small hidden compartments, found in some examples, may have contained an altar stone so that the cofferet, when opened, could be used as a portable altarpiece.(3) In addition to the practical uses of the prints, one should keep in mind that, in the fifteenth century, these holy images were considered a form of divine protection for both the contents and the owners.

The number of examples showing the use of woodcut prints as wall or ceiling decoration in the fifteenth century is small. This may be due, in part, to the vulnerability of paper to climatic effects and ageing; indeed, any print that might have been used may very likely been painted over, or else had new prints laid down on top of it.

Woodcut prints used as ceiling decoration were found in Switzerland and dated from about 1510-20 (Figs. 8 and 9).(4) These prints, showing Gothic ornamental designs, were used as border patterns between sections of carved wooden ceiling decoration. Old paint almost totally obscures the pattern on the print surfaces; however, they were assigned to the style of Urs Graf. This is the earliest known use of wood-

cut prints as ceiling decoration.

The use of woodcut prints to cover larger areas within rooms occurred later in the sixteenth century. An example from 1560 shows the use of printed patterns imitating intarsia (inlaid woodwork), again, applied to the ceiling of a room now in the Schweizerisches Landesmuseum, Zürich (Fig. 10). Max Lehrs suggested that printed fabric patterns on paper were inexpensive substitutes for tapestries in the sixteenth century.(5) It is not inconceivable that woodcut prints were used in this manner in the late fifteenth century.

There is only one single-sheet woodcut print reproduced in the Heitz volumes which, because of its pattern and size, indicates a use as wallpaper decoration (Fig. 11).(6) It was found inside the cover of a manuscript stamped from the abbey of St. Bernard in Tysogóra, in the last quarter of the sixteenth century.(7) The print shows the Face of Christ in the centre of an abstract decorative pattern and measures 29,8 x 21,3 cm. The woodcut was printed in a reddish ink on paper and, because the patterns are similar to designs woven in material, it was suggested that the print was a very early example of printing on paper (possibly fourteenth century), made during the period of "transition" from printing on fabric to printing on paper.(8) An example of early fifteenth century printing on fabric is a lectern cloth showing the Marriage at Cana, ca. 1400 (Fig. 12).

One might think, initially, that this woodcut print served as decorative paper on the inside of a manuscript, or bookbinding, as it was found in the St. Bernard manuscript; however, when two sheets of the print are placed next to each other, they form a continuous pattern (Fig. 13).

The pattern is also continuous when two sheets are placed one above the other; thus suggesting that the print could have been used to cover a large surface area, such as, a wall. The use of woodcut prints as ceiling decoration in the sixteenth century, gives further credence to the suggestion that this print, also, was used in some form of interior decoration, perhaps as early as the mid-fifteenth century.

The only other large decorative print of this type is in The National Gallery of Art, Washington, D.C. (Fig. 14). This woodcut print depicts The White Eagle and Crown of Poland. It was made in Poland, around 1450; however, it is thought to have been intended for printing on fabric and not on paper.(9) The design does not form a continuous pattern in any arrangement, as in the former example, although the closely trimmed edge at the top of the sheet suggests that part of the original design is missing. We cannot be certain, therefore, that the print was not intended to form a continuous pattern in its original state.

Woodcut prints were also used as decorated wrappers issued by publishers.(10) They enclosed unbound volumes which made the loose sheets of paper both easier to handle and more attractive to the buyer. The earliest wrappers were issued in 1482. They were intended as a purchasing incentive and were not meant to serve as part of the bookbinding. A Decorated Wrapper made in Augsburg at the end of the fifteenth century is a rare example of these prints, which were not normally saved (Fig. 15). The preservation of this print is due to the actions of a librarian at the Kloster Neuberg who, in the sixteenth century, bound the wrapper in with the volume.(11) The Augsburg wrapper suggests another use for

the woodcut print, The White Eagle and Crown of Poland. The central design, bordered by "angular, interlacing straps", has a similar 'cut-off' look to it, such as, that seen in the Polish print. It is possible that a border design, such as that shown on the wrapper, may have originally framed the woodcut print.

Another similar use for woodcut prints was as decorative covers for books. An example of this is a print produced in Ferrara at the end of the fifteenth century depicting St. George Killing the Dragon surrounded by classical and floral motifs (Fig. 16). Decorative woodcut covers were a cheap means of providing permanent covers for books. They were apparently not "publishers' bindings" but were supplied by binderies in a number of designs.(12)

Woodcut prints and late medieval society.

Fifteenth century social customs and traditions are expressed visually in woodcut prints from the period. One very common theme originates out of the custom of friends visiting on New Year's Day. They were expected to recite a greeting written in prose, which was often sharp and satirical in essence.(13) With the development of printed images and text, more printed New Year's Greetings were made after the second half of the fifteenth century. The most common motif shows the Christ Child seated on a brocade cushion (Fig. 17). The Child wears jewellry (two bracelets and a necklace) and is surrounded by flowers, animals, and gifts. This bountiful, rich scene is reflected in two banderole inscriptions, "vil god iar" and "vn e lage lebin", wishing a "good year" and "a long life". The Child is often shown

holding either an orb, or a bird, usually the cuckoo, a symbol of good luck.(14)

Calendars with printed images of certain planets, animals, and religious figures are associated with medicinal folklore of the fifteenth century. According to popular belief, these images 'ruled' over parts of the body and influenced their function. Printed calendars recorded the most favourable periods for blood-letting and portrayed the relevant parts of the body. These medicinal calendars were sold by apothecaries and barbers.(15) An Astrological Blood-letting Calendar from Strasbourg, ca. 1498, with typographical text and illustrations is shown in Figure 18. The illustrations represent a combination of religious and secular themes, thought to have some mystical relation to one another.(16) The "Nativity" and the "Massacre of the Innocents" are shown on the left, while on the right, a man is depicted surrounded by astrological symbols with lines drawn to their corresponding points on the body. Between the lines, the words, "gut", "bos", and "mittel" ("good", "bad", and "middle") refer to the effect achieved by blood-letting at those parts of the body. The other inscriptions, in German and Latin, give additional advice for blood-letting.

Another social custom in medieval Germany was to give a newly-wed couple a list of the furnishings and objects they would require in their new home.(17) These were portrayed in single-sheet woodcut prints showing twenty-four squares depicting all types of household goods surrounding the young couple and a rhyme describing the things needed for a good home. Other secular imagery dealt with death and disease. Warnings about death and the legendary, "Three Dead and Three Living", depicted the moralistic theme that death was

not selective and was the inevitable end for all. Social satires and proverbs whose meaning, no doubt fully appreciated in the fifteenth century, now alludes us, are depicted in woodcut prints. An example of this is the print, The Sleeping Tinker and Monkeys, a copy of an Italian engraving from the mid-fifteenth century (Fig. 19). The mischievous monkeys have taken advantage of the merchant while he sleeps by scattering the various trinkets about on the hillside. The inference is that the tinker is lazy because he continues to sleep, in spite of the commotion caused by the group of monkeys.

Another scene, most likely a local proverb, is shown in Figure 20. The title of this woodcut print is simply, Man Riding a Lobster, and it was made in late fifteenth century Swabia.(18) The lobster represents the astrological sign of Cancer, as shown in the Strasbourg Calendar (the second symbol down on the right) (Fig. 18). The symbol of Cancer covers the zodiac period of approximately mid-June to mid-July, a time when the earth begins to travel away from the sun and the days begin to grow shorter. In the print, the man seems to be riding the lobster out of the church courtyard where we see several skulls piled on top of one another in a window. It was a common procedure, in the Middle Ages, to dig up skeletons and stack the bones in the church, so that the graves could be re-used.

Perhaps the procession of churchmen, shown coming along the path at the top right, is a funeral and the workman in the church courtyard is clearing a grave for the new body. The man riding the lobster is saying (to himself), "Mich driegent dann myn sinn - ich ryt do ich har bin" ("If my senses are not deceiving me, I am riding where I have come

from"). Could he be the deceased whose bones are being dug up and because of this, he comes back to where he has come from (life?), riding a lobster the symbol of movement away from a certain point?(19) If this interpretation is correct, then one wonders why the man is shown in such a healthy state and not as a skeleton himself.

Along with representing satire, proverbs, and images of medieval folklore and beliefs, one South German woodcut print, dating from around 1440-50, stands out from the rest, in that it was used as a toy (Fig. 21). The Two Monkeys On Horseback print can only be found in three examples, two of which were copied from one original version.(20) The monkeys have interchangeable parts for their waists so that the piece of paper attached between the two figures can be moved, making the monkeys either horizontal or vertical to the horse's back.

Religious imagery has always held a greater importance and fascination in the mind of the individual believer and, because of this, it is fair to assume that fifteenth century woodcut prints used as decoration and as objects of daily use, such as, calendars and toys, were not as highly cherished as those portraying religious images or having a specific religious use. It is probably for this reason that there remains a large group of woodcut prints made in fifteenth century Northern Europe depicting religious subject matter. But it is an historical fact that this imagery and these prints were produced in association with a very popular religious devotion of the period which was dedicated to promoting a large assembly of Christian saints. The following chapter is designed to introduce the development and devotion to what is known as, "the cult of saints", and discuss the

relationship between these cults and their practises and specific woodcut prints made in the fifteenth century.

FOOTNOTES

CHAPTER ONE

1. M. Lehrs, "Die Dekorative Verwendung von Holzschnitten im XV. und XVI. Jahrhundert," Jahrbuch der königlichen preussischen Kunstsammlungen, XXIX, (1908), p.183.

2. K. Kup, "Notes on a Fifteenth-Century Cofferet," The Connoisseur, Sept., 1957, pp.65-66.

3. Kup, op. cit., p.66.

4. Lehrs, op. cit., p.192.

5. Lehrs, op. cit., p.193.

6. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 74, "Warsaw University Library Collection, Poland," S. Sawicka, 1931, No.1.

7. Ibid. A fifteenth century hand-written inscription on the print, "de conversatione feminarum 3 et 47", does not relate directly to the image or design.

8. R. Forrer, Die Kunst des Zeugdrucks vom Mittelalter bis zur Empirezeit, (Strasbourg, 1898), Plates: XX, XXI, and XXII.

9. R.S. Field, Fifteenth Century Woodcuts and Metalcuts from The National Gallery of Art, (Washington, D.C., 1965), No.285.

10. D. Miner, The History of Bookbinding, 525-1950 A.D., (Baltimore, 1957), pp.64-85.

11. Miner, op. cit., p.85.

12. Ibid.

13. E. Nockemann, "Der Einblattholzschnitt des XV. Jahrhunderts und seine Beziehung zum spätmittelalterlichen Volksleben," Diss. Univ. of Cologne, 1940, p.32.

14. D. Kuhrmann, Die Frühzeit des Holzschnitts, (München, 1970), p.16.

15. Nockemann, op. cit., p.34.

16. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 97, "Reliefprints in American Collections," T.O. Mabbott, 1939, No.22.

17. Nockemann, op. cit., p.35.

18. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 18, "Staats-, Kreis-, und Stadtbibliothek Augsburg,"

R. Schmidbauer, 1909, No.21.

19. I would like to thank John Roberts and Peter Hauser in the German Department at the University of Glasgow for help in this translation and interpretation.

20. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 50, "Aarau, Basel, Romont, St. Gallen, Zürich- öffentliche und private Sammlungen," E. Major, 1918, No.6.

CHAPTER TWO

WOODCUT PRINTS AND "THE CULT OF SAINTS".

Fifteenth century woodcut prints, on the whole, portray religious subject matter. A certain number of these prints, made in Northern Europe, portray only images of saints and subject matter originating from what is known as, "the cult of saints". Cults devoted to Christ and the Virgin had a large following in the fifteenth century, but numerous other cults existed, promoting the veneration of those saints who had been continuously encorporated into Christian literature since the earliest period of the religion. These cults encouraged the belief, which originated in the early stages of Christianity, that a saint, when worshipped and adored, would act as an intercessor with God on the behalf of the layman. The saint was represented in physical form by a relic, the bodily remains of the saint. The relic was used to establish and consecrate an altar which, in turn, became a shrine and place of pilgrimage and adoration, often considered a site of mysterious, unexplained incidents.

Prints functioned as visual documents which helped to promote the legend and "religious sacra", such as, shrines, relics, miracles, and pilgrimages, affiliated with the saint. The prints were cherished by the laity as devotional pictures, known as Andachtsbilder, and were considered holy, sacred objects in their own right. This is indicated by printed devotional inscriptions and, in some cases, handwritten supplications which occur on the same sheet as the holy image. The treatment of a print, for instance, cutting out

the Wound made in Christ's side from a printed image of either Christ or the Holy Heart, is further indication as to what extremes were taken to make the images seem more realistic. Also, the mysterious powers attributed to holy relics, such as the Holy Lance, supported the belief that the Wound was miraculously made in the paper by this relic.

In the thirteenth and fourteenth centuries, small images in the form of hand-drawn and painted compositions on parchment, were used for devotional purposes (Figs. 22 and 23). Images of the saints were made in the same manner, using time-consuming methods and parchment as the surface material (Fig. 24). Scholars agree, that the availability of paper in Europe by the late fourteenth and early fifteenth centuries had a profound influence on the use of printing and its popularity as a method of production at that time.(1) Printing from woodblocks and a substantial paper supply provided the method and material to produce large numbers of relatively inexpensive images. Promoters of saintly cults in Northern Europe utilized this combination of method and material, substituting the printing medium and paper for time-consuming methods and costly parchment. As a result of this situation, there are a large number of woodcut prints on paper depicting saints, their legends, relics, and shrines, and the religious beliefs and customs associated with "the cult of saints".

The following discussion is concerned with the customs that developed around "the cult of saints", which determined so much of the imagery of woodcut prints and many of their uses in fifteenth century Northern Europe.

"The cult of saints".

"The cult of saints" in medieval Northern Europe displayed customs and traditions similar to those of earlier pre-Christian religions. Christian shrines were often built in centres of previously pagan worship.(2) It has been suggested that Greek polytheism was a source of many of these traditions found in "the cult of saints".(3) The centre of devotion to a Greek hero was his tomb. This was sometimes sheltered by a temple, which often contained more than one tomb. When the bodily remains, or relics, of the hero were not available, a cenotaph was erected in his memory. The relics of Greek heroes were thought to afford protection to the city in which they were housed.(4) Translations, the miraculous appearance of relics on a site, were generally preceded by heavenly predictions foretold by oracles. Oracles were also consulted to give details concerning the hero's relics, his name and legend, so that honours might be paid to them. Objects that belonged to heroes or were associated with them were displayed in the temples for veneration.(5) Duplication of heroes' remains resulted in more than one tomb of a specific hero.(6) Thus, the veneration of heroes in Greek polytheism consisted of: relics, tombs, displayed objects associated with the hero, translations, apparitions, and the duplication of relics, all of which manifested in the exact, or similar, form in later Christian cults.

The earliest Christian saints were martyrs. The life of a martyr was associated with the Life of Christ: His devotion, suffering, and sacrifice for His faith. Martyrs were those members of the faithful who most closely followed His

example and were honoured and venerated through what is known as, "the cult of martyrs", for having done so. The early Christian religious ceremonies honouring martyrs resembled both Jewish and Greek predecessors. At the time of Christ, the Jews had already established practises that included the veneration of dead prophets, patriarchs, and martyrs.(7) As a part of this veneration, they built monuments over the ground in which the bones of the dead were buried. The Christians also built shrines over the relics or bones of their revered martyrs and they used flowers and perfumes during the funeral ceremonies, just as their pagan predecessors had done.(8) But the Christian "cult of martyrs" honoured not the birthday of the martyr but the death-day, or dies natalis, the birthday in heaven of the martyr, and during these ceremonies the whole community took part and not just the immediate family, as in the pagan ceremonies.

In the early stages of "the cult of martyrs", which later became known as "the cult of saints", Augustine made the distinction between devotion to these cults and adoration of God:

> "We build temples to our martyrs not like temples for the gods, but as tombs of mortal men, whose spirits live with God. We do not build altars on which to offer sacrifices to martyrs, but we offer sacrifice to God alone, who is both ours and theirs".. .(9)

Devotion to the martyrs increased in the fourth century. New allowances were made as to who could be honoured and venerated. Confessors and virgins were included with martyrs, so that the monastic, chaste way of life became regarded somewhat as a substitute for martyrdom. Those who

led such a pious life were considered worthy of honour after their death; thus, the ranks of venerated cult figures grew.(10) The relics of these figures were believed to have inherent miraculous powers, or virtues, and were capable through translations of appearing at a previously unknown site. Personal objects and clothing of the holy figures were considered worthy representations of the saint and the saint's powers to intercede with God and effect miraculous cures. Miracles and apparitions attested to the powers of a saint's shrine and the saint was invoked for protection from disease and by groups or individuals who, in one way or another, associated themselves with the saint's life or attributes. Offerings, known as ex votoes, were made at the saint's shrine, either to effect cures or as a symbol of devotion and veneration.

Saint-worship and hero-worship express similar traditions, whether they were consciously adopted or, "the natural outcome of an identical state of mind under similar circumstances".(11) Both encouraged the veneration of the tomb (the site of the holy relics), offerings of food or expensive materials made at the tomb, feast days organized to celebrate the revered figure, and the belief in the miraculous powers of the figure's relics. But the Christian form of worship, in its original concept, emphasized the act of devotion through the saint to God and not devotion to the saint alone.

The topography of medieval Northern Europe was suited to the development of this type of religious devotion. All forms of medieval life, including religion, tended to be localized because of economic and political constraints imposed by rural feudalism.(12) Large numbers of cults were

established promoting, among other things, the development of individual artistic styles and a diverse iconography. Deterrants had a positive effect on the growth of "the cult of saints" in Northern Europe. Pilgrims were diverted from visiting Rome during the period 1309-1376, when the papacy was located in Avignon, and more indulgences were granted to northern shrines.(13) The occupation of the Holy Lands and domination of Mediterranean sea routes by the Saracens was yet a further impetus to the establishment of shrines in the North.(14) "Wars could stop the flow of pilgrims, but they also could create new shrines, if the saint was either warlike or a patron of warriors."(15) Plagues had a similar effect, that is, disrupting the pilgrim traffic yet inspiring increased devotion among the survivors.(16) Church customs contributed to the popularization of the cults and their shrines. In the late fourteenth century, the number of obligatory Church holidays ranged from 120 to 150 within the course of one year.(17) Jubilees were another form of celebration which brought together large groups of pilgrims and visitors to commemorate festival dates.(18) During these occasions, towns were swollen with tradesmen and craftsmen making use of the economic climate provided.

Imagery for woodcut prints made in fifteenth century Northern Europe was supplied, in part, from the legends of saints associated with cults, the other part originating from Biblical themes. These legends tell of the saint's life, martyrdom, translation, and of the miracles performed by the saint or which occured at the saint's shrine. Further imagery documented collections of relics and pilgrimage scenes at the saint's shrine.

Legends of the saints, their lives, martyrdoms, translations, and miracles.

Legends of the saints and their shrines were promoted by written and oral means in conjunction with printed images. It was necessary to have written iteneraries and guidebooks for pilgrims.(19) These served a dual purpose: they popularized the existence of a cult's shrine and usually contained maps giving the location of the shrine, along with others that lay along the route or in the nearby vicinity. Among the written works produced at the scriptorium of Conques, for the cult of St. Foy during the eleventh century, a large corpus of literature included: a Liber miraculorum (a book of miracles attributed to the saint probably during her lifetime and at her shrine), the liturgy of the saint, her martyrdom and translation, and the vernacular Chanson de sainte Foy (a Provençal poem which included a narrative of St. Foy's passion, translation, and first miracle.(20) Often the vernacular versions of a collection of miracles did not originate from the shrine literature but were the result of personalized translations from the original in Latin.(21)

Written legends were passed on by word of mouth among visiting pilgrims. Saints' lives constituted religious folktales recited orally to a group of people along the line of a chanson de geste and provided a common form of entertainment at pilgrimage sites.(22) Miracle and mystery plays were staged for the public. These developed out of liturgical plays originally performed at the church door. The plays were also performed on wheeled platforms by guilds and confreries which travelled from town to town, often enacting

the religious subject matter in a bawdy, secular manner.(23)

Medieval Europe had a selection of wandering "conveyors" of song and legend. "Goliards" were men who had trained in a monastery and frequently still wore the tonsured hairstyle, which assured them of the public's reverent attention. They were ordained priests and generally spoke Latin, but they either did not want, or else were not allowed, to remain in monastic life. Perhaps for this reason, they became paradists of formal religion specializing in clever, mock disputations and satire and verse based on animistic-type gods.(24) Another type, the "jongleur", is first seen in the eleventh century and originated in the minstrel class of entertainers attached to a court. As they grew more independent, the "jongleurs" became professional interpreters of songs which they adapted according to the taste of their audience and their own sense of humour.(25)

One manner of popularizing a saint's legend, without risking the personal interpretation of an intermediate "conveyor" or translator, would be to replicate scenes from the legend in an exactly repeatable form, a printed image. If produced in large enough numbers, these printed images could reach virtually as much of the population as legends promoted verbally and with their original meaning intact. Religious organizers in the fifteenth century used prints in this manner to popularize their cults.(26)

St. Sebastian was one of the more popular saints in the fifteenth century. Together with St. Roch, he was the most common saint implored for protection from the plaque, thought to be "inflicted by arrows". He was also the occupational patron saint of archers, upholsterers, quiltmakers, iron merchants, and soldiers. The arrows that pierced the saint's

body were associated with needles and the iron points on arrows. Soldiers related to the saint's image because of his own profession as that of a Roman soldier.(27) In Figure 25, the saint is shown being shot with arrows by Diocletian's soldiers, while the Emperor himself looks on emotionless. The print is South German and dates from about 1440-60. The powerfully expressive imagery is combined with an antiphon of devout prayer and veneration, which reads:

> "Commemoration of blessed Sebastian, Martyr (Antiphon),
>
> I beseech you blessed Sebastian, for great is your faith, to intercede for us with the Lord Jesus Christ that we may be delivered from pestilence or epidemic.
>
> (Versicle) Pray for us blessed Sebastian.
>
> (Responsory) That we may be made worthy of the promises of Christ.
>
> (Prayer) Almighty everlasting God, through the merits of blessed Sebastian your most glorious martyr, revoke that widespread pestilence, deadly to men. Grant your supplicants who carry this prayer about with them, or have it installed in their homes, or have it in the memory of their hearts, and who will have gathered devoutly on the day of your feast that they will have refuge from the widespread, reknown pestilence. Through their confidence in your merits and prayers, deliver us from this plague and disease, and from all evil to come as well as from all dangers to the body and spirit, and from sudden unexpected death and all enemies visible and invisible every day, hour and moment through Christ the Lord."(28)

Saintly cults prompted personal attachment between the devotee and the cult figure. This "intimate" relationship could be strengthened by having an image of the saint to keep near or in the home. Through his devotion, the layman could hope to receive the benevolent protection of the saint. Woodcut prints of saints are known to have been hung on walls, doors, chests, and cupboards.(29) In Figures 26 and 27, a woodcut print showing St. Elizabeth of Hungary is seen

attached to the wall behind a woman in a painting by Petrus Christus, ca. 1455. She was from a Genoese merchant family in Bruges and the image probably represents her patron saint.(30)

Another woodcut print documenting a scene from a saint's life is shown in Figure 28. This print was made by the woodcutter "Casper" who worked in the Regensburg area around 1460. Seven known prints have the signature "Casper" and three more were probably made by the same artist.(31) The print depicts St. Florian as a valiant knight in armour putting out a fire within the city walls and, presumably, rescuing the maiden shown waiting patiently at the tower window. The cult of St. Florian did not evolve until the fourteenth century. It was then that he became known as a protector against fire. According to legend, in his youth St. Florian had saved a burning house through prayer alone. In fact, Florian was a soldier in the Roman Army and was in Austria during the third century. He was martyred by Diocletian by being drowned in the River Emms.(32)

Numerous woodcut prints produced at Brigittine convents and monasteries throughout Germany and the Netherlands in the fifteenth century (especially between 1480-90), provide a good example of the use of printing by a religious group to promote and popularize its saint.(33) St. Bridget, a Swedish princess, founded the Brigittine Order for men and women in 1350, but she is perhaps best known for her book of Revelations, a series of visions which the saint experienced and recorded. She died in 1373 and was canonized in 1391.

The conventional depiction of St. Bridget shows her wearing the habit of her Order (Fig. 29). A walking staff with a pilgrim hat (with badges) and a wallet suspended from

it is placed next to her. These objects, along with a shield and the letters "SPQR", allude to the saint's pilgrimages to the Holy Lands and Rome. An additional shield showing the Rampant Lion and a Crown refer to her Swedish noble ancestry. A second representation of the saint in a woodcut print shows her seated, writing her book of Revelations (Fig. 30). In the upper left corner is an apparition of the Virgin and Child and next to this, the inscription, "o brigita bit got fir uns" ("Oh Bridget, pray to God for us"). "Bit got fir uns", and slightly modified versions, is frequently found in combination with images of saints. It infers a personal attachment to the image of the saint and explains the devotional nature of the print. The print dates from around 1475-80 and has a signature, "michil", shown just below the saint to the left. Two more woodcut prints with similar compositions and dating a few years later are shown in Figures 31 and 32.

A woodcut print dating from 1480-1500 portrays St. Bridget with her symbolic attributes and apparitions of God holding Christ and the Virgin and Child (Fig. 33). Surrounding this composition are monks and nuns from the Brigittine Order. A similar composition is shown in Figure 34. The first print was made for the festival of the consecration of the Brigittine abbey at Maihingen, which was protected by the Houses of Oettingen whose arms are shown in the lower right corner below the saint. It was printed from three separate woodblocks. The images are placed within separate spaces, created by ornamental latice work, in the format of a triptych altarpiece. Woodcut prints in this format (triptych) are known to have decorated the wings and panels of small, portable altarpieces.(34) A.M. Hind suggested that this print might

have been used as an altarpiece.(35) These small altarpieces were carried when travelling and used as personal devotional objects by monks and nuns.(36)

An example of a Portable Altarpiece made from hinged wooden boards decorated with woodcut prints is shown in Figure 35. This early sixteenth century altarpiece, made by Melchior Lotter in Leipzig, has the liturgy of Holy Communion printed on the centre sheet and scenes from the Passion and Life of the Virgin on the two adjoining panels. Shown below the altarpiece (in the photograph) is the original uncoloured printed sheet.(37) A second small altarpiece is in The National Gallery of Art, Washington, D.C..(38) Another type of portable altarpiece, although not decorated with printed images, does display a decoration technique in leather similar to that of the metalcut print style (Fig. 36). The decoration in gold on leather is on the inside of a simple, low, rectangular case divided into three sections. The scenes portrayed are those of the Crucifixion with Mary and John, in the centre, and Two Saints and a Donor on the adjoining panels. The work is from France and was made in the early sixteenth century.(39)

As a consequence of widespread superstition and belief in the powers attributed to shrine locations, people believed that miracles commonly occurred on these sites. A cult was sometimes established as the result of a miracle, such as, the translation of a relic or holy object. In the woodcut print, Transportation of the Virgin's House to Loreto, the tiny house is shown being lifted off of its foundations by two angels (Fig. 37). God looks on over the scene, which is described by the two inscriptions as being located in the Holy Lands between Nazareth and Jerusalem. The legend tells

of how the house miraculously appeared on a site in Loreto, a town in northeastern Italy, on December 10, 1294. Widespread knowledge of this legend led to the popularity of the site as a place of pilgrimage. This woodcut could possibly have been produced for the bicentennial anniversary of the miracle as indicated by the small "CC" in the lower left corner. The typeset inscription attests to the miracle:

> "By the angels of paradise this church was transported without its foundations, which are still in Nazareth, to this place. It took a long time, but this was of no importance to the Christians of the vicinity who gave no heed to people deprived of good sense."(40)

This print was assigned to the Savoy region of France, and if this stylistic analysis is correct, it would indicate that the legend of the shrine was being popularized by French promoters through printed images miles away from Loreto. An Italian woodcut print, The Madonna of Loreto, was also intended to promote the shrine. The name of the site and saint are printed at the top of the sheet, with a devotional prayer along the bottom border (Fig. 38).

Miracle imagery did not always portray a holy object but could represent the narrative of an unexplained incident at a shrine. It was claimed that in 1384, during the Mass, a knight by the name of Oswald Milser "out of pride and arrogance" demanded a larger Host than the other communicants, at which time he fell through the floor where he stood. The centennary of this event took place in 1484 and is depicted in the woodcut print The Miracle at Seefeld (Fig. 39).(41) The original date of the miracle is given in the central part of the composition. The arms of Austria are shown in

the upper left corner and those of the Kloster Seefeld in the upper right.(42)

St. Gregory is credited with having codified liturgical chants (Gregorian chants) and responses which, according to stories in the Golden Legend, had mysterious effects. The Mass of St. Greogry often depicted these "effects" and was a popular theme in both paintings and prints made during the fifteenth century (Fig. 40). An early woodcut print (1430-40), possibly South German or Austrian in origin, shows Christ as the Man of Sorrows (Fig. 41). He is shown rising from a tomb with symbols of the Passion surrounding Him. He points mournfully at the Wound in His side and holds the cat-o'-ninetails used during the Flagellation. Similar thematic elements, symbols from the Passion and Christ rising from the tomb, are shown in two woodcut prints depicting the Mass of St. Gregory, made in the Swabian region around 1470 (Figs. 42 and 43). In both prints, St. Gregory is shown reading the Mass liturgy and, while he is kneeling before the altar, the image of Christ and symbols of the Passion miraculously appear behind the altar. In a later version (Fig. 44), the imagery is in less detail, showing simply the figure of Christ rising from behind the altar where St. Gregory and his followers kneel in prayer. The inscription below this scene reads:

> "O Lord Jesus Christ, son of one God, who hanging on the cross for sinners said 'Father forgive them for they know not what they do'. It is manifestly for this benefit that I have offered."(43)

The Mass was the major source and prime mover of devotion to the Passion. In addition to representing the miracles which

occurred during St. Gregory's speech, this imagery has a direct relation to the symbolism referred to in the Mass.

The relic.

A cult was established not only around the legend of its patron saint but often, more importantly, around the relic of that saint which was used to consecrate the shrine. A relic was believed to be a part of the saint's body, having the mysterious virtues, or miraculous powers, of the saint. The re-duplication of relics led to notions that holy relics had the power of self-reproduction and that this power was equal for each relic, no matter how many were re-duplicated.(44) The amount of virtue was also equal for each relic regardless of its size.

There was little difficulty in obtaining a relic in the Middle Ages. The catacombs in Rome proved an abundant source for corporeal relics, having been the burial site of earlier Christian martyrs. Along with Rome, Venice was the arrival point for corporeal and non-corporeal relics brought from the Holy Lands.(45) Relics could be bought from Saracens in the Holy Lands but the outright sale of a relic was naturally prohibited among Christians. Transactions were easily disguised in the form of gifts from individuals and donations made by wealthy patrons of a church or shrine. An instance noted in the writings of Friar Felix Fabri, a fifteenth century German pilgrim who visited Jerusalem, tells of, "a basin full of folded papers with relics in each of them", which were distributed among visiting pilgrims at a Fransiscan cloister in Jerusalem.(46) Pilgrims brought back relics, which they obtained themselves, although warned not

to disturb the holy sites they visited. "In spite of precautions taken to safeguard the holy objects, precious and venerated fragments of the Holy Places of Christian worship did go homeward in the luggage of the pilgrims."(47)

The demand for relics in the Middle Ages promoted a wide distribution of them and various means of acquisition such as, gifts, donations, warfare, and, not infrequently by theft. One unique way of obtaining a relic was to "obtain" a potential saint while he or she was still living. St. Romauld (d.1027) was almost assasinated by pious peasants who wanted his body to remain with them and work miracles on their behalf; likewise, St. Francis was welcomed back by the people of Assisi thinking that his death in their town would mean relics for them and miracles in the future.(48) In some instances, such extreme measures were not necessary. A relic might be discovered and its appearance attributed to a miraculous translation, such as, the discovery of the "Virgin's House" in Loreto.

Relics were a source of value to their medieval owners, treasured not only spiritually but as a source of income. Bishop Nivelon de Cherisy of Soissons (13th century) planned to pay for a cathedral and town bridge with the money accumulated from offerings made by pilgrims who came to view the relics enshrined at Soissons.(49) Venetian bankers considered the "Crown of Thorns" valuable enough to secure a loan for Baldwin II. St. Louis of France later obtained the relic from them.(50) Consequently, the value of a relic could be so great that the discovery of a 'fake' relic, as in the case of a relic of Santa Reparata in Florence, which was proven to be a piece of wood covered in plaster, might result in a considerable financial loss, whether from the

purchase of the relic or in the future revenue planned from displaying it.

During times of financial need, usually when for one reason or another the numbers of pilgrims, or income, had fallen off, an ecclesiastic member would take a relic 'on tour' throughout the countryside. Donations would be collected from exhibiting the relic. In France, "quests" as they were known, originated shortly after the eleventh century and continued until the mid-sixteenth century, being especially common in the fifteenth century.(51) Pope Urban V (1363) warned that questors, if employed, were known to cheat!(52) Chaucer's character from The Canterbury Tales provides a marvelous personification of a questor:

> .."As to his trade, from Berwick down to Ware
> There was no pardoner of equal grace,
> For in his trunk he had a pillow-case
> Which he asserted was Our Lady's veil.
> He said he had a gobbet of the sail
> Saint Peter had the time when he made bold
> To walk the waves, till Jesu Christ took hold.
> He had a cross of metal set with stones
> And, in a glass, a rubble of pigs' bones.
> And with these relics, any time he found
> Some poor up-country parson to astound
> In one short day, in money down, he drew
> More than the parson in a month or two,
> And by his flatteries and prevarication
> Made monkeys of the priest and congregation"..(53)

The Pardoner has been termed a "religious conman", the type which the Pope must have been warning against. These men were known to sell indulgences and relics "by the bagful", pocketing the profits for themselves.

One of the most famous collectors of the fourteenth century, the Duke de Berry, owned an amazing array of religious and secular curiosities, some of which are mentioned in the following passage:

..."one of Charlemagne's teeth, a piece of Elijah's mantle, Christ's cup from the Last Supper, drops of the Virgin's milk, enough of her hairs and teeth to distribute as gifts, soil from various biblical sites, a narwahl's teeth, porcupine's quills, the molar tooth of a giant, and enough gold-fringed vestments to robe all the canons of three cathedrals at one time."(54)

The duke had agents who kept him informed of any curiosities that were discovered. When he was told that a giant's bones had been dug up near Lyon in 1378, he immediately authorized purchase of the find.(55) His taste for the unusual, if not somewhat bazarre, is not only an indication of one individual's imagination but the imagination of the medieval populace who believed that such findings and objects were authentic. According to legend, Pope Lucius III (1181-1185) when searching for a relic to give to Casimir II of Poland, walked into his sacristy where he kept an ample supply of relics and "asked the relics" which one wanted to go to Poland. In response to his inquiry, the hand of St. Florian raised; thus, St. Florian became one of the patron saints of Cracow.(56)

In 1155, a large collection of bones were discovered at Cologne. They were identified as those of St. Ursula and her companions who were martyred in Cologne by the Huns in the fourth century.(57) The discovery led to an increased popularity of the saint's legend and cult, and some of the relics were sent out to various countries. The bones which were kept in Cologne are presumably those which are found today in the Goldene Kammer at St. Ursula's in Cologne. They have been used in a startling decorative manner above various reliquaries along one side of the room (Fig. 45).

Relics were used as instruments of diplomacy between

kings and towns, given or awarded as an insurance of allegiance. The legends associated with relics were used as "tokens of dynastic prestige" increasing the fame of noble families and, in the long run, the relic could also increase the fame and fortune of the town in which it was held.(58) Relics and their reliquaries were also important as an example of civic prestige. The notoriety of a relic influenced the magnificence of the structure in which it was housed; consequently, the magnificence of the reliquary added further glorification to the legend of its saint. A splendidly decorated reliquary would have attracted pilgrims who provided a large part of the shrine's revenue (Fig. 46). The range of reliquary structures extended from large architectural forms, such as that which housed the collection of Nürnberg relics (Fig. 47), to smaller objects, which represented the part of the saint's body, i.e., hand, foot, or arm, where the relic came from (Fig. 48). Sometimes the container was a partial figure of the saint (Fig. 49). Figural reliquaries, such as the latter, were painted to represent life-like portraits. They were displayed in chapels, along the walls of a church or shrine, and were placed on the altar during the Mass.

Cities took a distinct pride in the relic or collection of relics which they held. There was a "Miraculous Host" in Orvieto, "Drops of Christ's Blood" in Bruges, and "Christ's Swaddling Clothes" among the Four Great Relics contained in a silver shrine in a cathedral at Aachen.(59) A woodcut print made in Nürnberg, around 1470-80, illustrates the holy relics held in that city (Fig. 50). Their most famous relic from the Holy Lance, is shown prominently positioned in the centre of the sheet with various small reliquaries

and holy garments surrounding it. Official recognition of the authenticity of this relic was given by Pope Martin V in 1424, when he declared that Nürnberg did, indeed, possess a fragment of the lance that pierced Christ's side during the Crucifixion.(60) Several small woodcut prints showing an, Angel Holding a Cloth with the Image of the Holy Heart, are regarded as having been made in Nürnberg around 1480-90 (Figs. 51 and 52). The first image, printed on parchment, has the Wound in the right side of the Heart cut out. This refers to the Wound made in Christ's side during the Crucifixion and carries an indirect reference to the Holy Lance (the Nürnberg relic) used to inflict the 'real' wound.

Another example of this unusual treatment of a printed image, is found in an engraving, referred to as an Indulgence Image (Fig. 53). It was made in Brussels, ca. 1505, by the Master "S". A small section has been cut out at the point where the Lance pierces Christ's side. He is shown as the "Man of Sorrows" with symbols of the Passion and the figures of St. Bernhard of Clairvaux and an anonymous bishop. The border inscription on the print reads:

> "Know that whomever says a Paternoster and Ave Maria before this Heart of Christ that was pierced by the Holy Lance, will recieve 80 days indulgence."(60)

In both instances, it is difficult to say what the original intention was for cutting the printed images. In the case of the engraving, it may have made the image seem more realistic, especially because there is a reference to the Heart of Christ "pierced by the Holy Lance" in the indulgence. In the woodcut print, the cut out may have been attributed to having been made by the mysterious powers of the Holy Lance relic.(62) Given the belief in the miraculous effects

attributed to holy relics and the desire to see these abilities in practise, the latter explanation does not seem so unlikely. The discussion of superstitious beliefs and practises associated with religion, in fifteenth century Northern Europe, is continued in the next section.

The powers of consecrated objects.

The magical powers of the saint were believed to reside near the saint's shrine. Because of this belief, pilgrims seeking cures would sleep at a shrine for up to a month at a time in the hope that, during this period, they would have a vision and be cured. This custom, known as "incubation", dates back to earlier pre-Christian pagan religions.(63) Relics and objects associated with the saint were also believed to have curative powers if touched to the diseased part of the body. One report claimed that a man had been restored to good health by drinking the water in which some fragments of the rags from St. Cuthbert's garments had been soaked.(64) Again, the Pardoner from The Canterbury Tales describes a selection of relics which he carries with him and claims to have curative powers:

> .."Then I bring all my long glass bottles out
> Cram-full of bones and ragged bits of clout,
> Relics they are, at least for such are known.
> Then, cased in metal, I've a shoulder-bone,
> Belonging to a sheep, a holy Jew's.
> "Good men," I say,"take heed, for here is news,
> Take but this bone and dip it in a well;
> If cow or calf, if sheep or ox should swell
> From eating snakes or that a snake has stung,
> Take water from that well and wash its tongue,
> And it will then recover. Furthermore,
> Where there is pox or scab or other sore,
> All animals that water at that well
> Are cured at once, Take note of what I tell,

If the good man - the owner of the stock -
Goes once a week, before the crow of cock,
Fasting, and takes a draught of water too.
Why then, according to that holy Jew,
He'll find his cattle multiply and sell.

And it's a cure for jealousy as well"..(65)

Jean Gerson (1363-1429), an early fifteenth century theologian and reformer in the Church, condemned this type of popular superstition which included practises, such as, "eating an apple on which words had first been written as a cure for fever".(66) It is not inconceivable that printed words and images were used in similar customs as those mentioned above. In his book, Prints and People: A Social History, A. Hyatt Mayor suggested that lithograph prints from the nineteenth century depicting Christ Crucified, were given to sick men and animals as a cure, perhaps by drinking the water in which the prints were soaked, as in the relics of St. Cuthbert (Fig. 54).(67)

As a consequence of popular superstition and belief in the powers inherent in shrines, even items that were not relics or objects associated with the saint were used as talismans and amulets. These 'secondary objects', such as, pieces of jewellery, rings, and small bells, were carried by a pilgrim or purchased at the site and would be touched to the saint's shrine or reliquary. In this way, the object was consecrated and imbued with the powers of the saint.(68) The pilgrim could then take some of the saint's powers away with him. As in the service of the Eucharist, when the wafer and wine are 'transformed' into the Body and Blood of Christ, the act of consecration was necessary in this instance to formalize the change that had occurred in the object. Doctors and apothecaries in fourteenth century Bologna, dealt in a

variety of curative herbs and materials which included church wafers.(69) Consecrated wafers, when placed on cabbage leaves, were thought to keep off chewing insects.(70) Pieces of cloth, known as "brandea", were consecrated by being laid upon a saint's tomb, in order to 'absorb' some of the powers of the saint.(71) They were then distributed as non-corporeal relics, having equal powers to those of original relics (bodily remains).

Marianus Socinus of Siena (1401-67), a professor of canon law at Padua and Siena, quoted Aquinas, saying that it was, "permissible to wear a verse from the Gospel around the neck against fever".(72) In some instances, wearing a saint's name was thought to either cure or ward off disease. In the Merchant of Prato, Francesco Datini's wife was given this type of 'prescription' against the "mother's complaint".

> (Saint) "Elizabeth suffered from the mother's complaint in her youth; and she always prayed to God to keep it in her body, in retribution for her sins. And she always kept it in her body; until; the angel Gabriel; announced to her; the birth of St. John the Baptist; and then she was freed of the said complaint; and then she prayed God that whoever should wear her name with reverence upon her person, should be freed from every ill; And so mayest Thou deign to free this Thy servant."(73)

The woodcut print, Hand of God, exemplifies the use of a printed image in customs such as those mentioned above (Fig. 55). The border inscription surrounding the image of Christ's Hand raised in benediction reads:

> "Whatever has been, or will be, placed next to this, shall be blessed by the right hand of the omnipotent Father."(74)

This impression is unique and its use, as indicated by the inscription, leads one to speculate on the numbers of printed images that were used in this way and were destroyed in the course of performing their protective or curative roles.

A mixture of devotion and superstition led to the belief that the 'secondary object' itself could obtain or effect miraculous cures. Fifteenth century reformers in the Church stressed that, the importance of religious objects lay in their representation and not in the physical object itself. Scholarly authors warned against superstitious beliefs and observations, such as; writing the name of God on the wall when thunder was heard, in order to protect the house from lightning; the use of consecrated objects for medicinal, veterinary, or agricultural purposes; and carrying written words as amulets. They argued that any effect derived from such practises was the work of demons.(75) These warnings and reminders, however, serve to show just how prevalent superstition, mixed with religious devotion, was in the fifteenth century. The printed image found a place and function alongside that of the relic, shrine, curative waters and inscriptions, and ex votoes. It too, was caught up in the whirlpool of conflated religious doctrine and superstitious belief in fifteenth century Northern Europe.(76)

The pilgrimage scene.

Making a long and often perilous journey to a holy site was intended to signify the piety and devotion of the layman. Pilgrimage sites evolved around: the places where saints lived and died; where visions or apparitions of the saint, or those

close to the saint had occurred; where manifestations of "divine power", or translations, had been discovered; and where relics of a saint were held. The pilgrimage was seen as a penance, and the pilgrim could hope to benefit spiritually, and sometimes physically, from being exposed to powerful "religious sacra" in the form of: holy images, curative waters, holy objects and relics, and the shrine itself. Woodcut prints from the fifteenth century portray pilgrims visiting shrines and in devotion before the saint.

According to records, droves of pilgrims visited the shrine of St. Elizabeth at Marburg; a saint whose charitable acts won her canonization in 1235. Those afflicted with disease, smeared themselves with earth from the saint's grave, while others were laid on top of the tomb, hopeful of receiving a cure by the closest possible contact with the saint. Some of the pilgrims implored the saint, others threatened her; some people made vows, while others presented money or wax offerings.(77) The coloured woodcut print, Pilgrimage Scene at Nonnenweiler, portrays similar devotional acts at the tomb of St. Wendelin (Fig. 56). The inscription above the scene reads: "heilige herr s. lendlin zu Nuneweir im breisgau, b.g.f.u." ("Holy St. Wendelin at Nonnenweiler in Breisgau, pray to God for us", abbreviated, "b.g.f.u."). The name of the saint is written, again, on the tomb. The inscription is explicit in describing the location of the shrine, the saint, and the devotional nature of the scene (in the phrase, "pray to God for us").

The pilgrims are shown in devotional gestures enacted according to their reasons for visiting the shrine. The woman at the lower end of the tomb bathes her swollen knee in the curative waters, while at the opposite end of the tomb,

another woman drinks the waters from a shallow pool. Three of the four figures kneeling close to the tomb are in prayer, while the fourth, the woman kneeling at the corner of the tomb, holds up an offering, or possibly a piece of earth dug out from the hillside on the far right. To the right of this group, is an unidentified male figure with a nimbus shown beheaded with his arms and legs outstretched. A group of witnesses to the incident stand assembled to the right. One woman gestures with her right hand to her eyes and her left hand towards the figure, possibly experiencing a vision of the figure's martyrdom.(78) Such events formed part of the legend that evolved around the shrine. Often a person, known as a miraculé, lived on the site of the shrine witnessing miracles that occurred at the shrine and telling of them to visiting pilgrims. In the background of the print is a landscape scene of forest and mountains. The abbey of Nonnenweiler at Breisgau is probably the building shown on the horizon. The two stags are emblematic of the abbey.(79) The figure leaning against the shed is probably a farmer, or sheperd, as St. Wendelin was the patron saint of these occupations.

Ex votoes were objects left at the shrine as offerings. They are seen in the woodcut print of St. Wolfgang, made in Regensburg around 1460, hanging from a pole suspended to the upper right of the saint (Fig. 57). By definition, an ex voto is an "offering made in pursuance of a vow".(80) These objects were often made in the form of that part of the body which was afflicted with disease or, as in the case of a sick animal or child, a replica of the whole body was made. They were offered to the saint in the belief that the saint would transmit the disease from the real form to its represen-

tation, and in this way, alleviate the sufferer of disease. They frequently adorned the area of the shrine, suspended from the ceiling or along poles running across the width of the room. The most common material used for making ex voto objects was wax because it is best suited to making small cast models and was considered a costly sacrifice on the part of the devotee. A selection of ex votoes are seen in a painting by Hans Mair von Landshut (Fig. 58). This painting, made in 1483, is from the Kloster Neustift in Freising and portrays a group of pilgrims seeking help or cures from the hermit monks, Anianus and Marinus, who lived at the Kloster Neustift. The small replicas of human figures, hands, and feet are shown hanging from a pole in the upper right corner of the painting. Besides wax objects, other items, such as small articles of clothing, were left in the shrine as general tokens of devotion, veneration, and sacrifice. Later in the eighteenth and nineteenth centuries, small paintings were made which depicted either a miraculous cure, a rescue in which the saint had interceded, or a devout person in the presence of a saint. These, too, were left in the saint's shrine as ex votoes (Figs. 59 and 60).

One composition that frequently appears in woodcut prints made during the fifteenth century in Northern Europe, is that of a saint with usually two or more lay figures. The figures are depicted either kneeling with offerings, or in prayer, or else imploring the saint to cure their disease. The woodcut print, St. Anthony the Hermit, made in the Swabian region of Germany around 1440-50, provides an excellent example of this specific composition (Fig. 61). The suggestion has been made that the figure shown in the print is not intended to represent the living saint but a sculpture of the

saint.(81) This is unlikely, however, as the overpowering, motionless presence of the figure and its immense size, probably derive from an intention, on the part of the artist, to represent the stoical, protective nature of the saint.

St. Anthony was a hermit and founder of monasticism and wears the cap and cloak of a monk's habit. In his left hand he holds a staff, signifying his great age (died at the age of 105), with the tau cross mounted at the top of it, the "T" being the first letter in the Greek word Theos meaning "God". The "T" is also shown on the saint's shoulder. Two small bells are suspended from the cross, common symbols of hermits who used them to frighten and repulse demons.(82) He also dispelled temptations with the sign of the cross. The pig symbolizes the demon of sensuality and gluttony; therefore, it is placed below the saint to represent his triumph over sin and sensual pleasures. According to legend, after having had a vision of the flames of hell, the saint no longer had desires of the flesh and because of his resistance to the flames, or temptations, he was invoked as a patron saint for protection against fire.(83) He was also invoked for cures of the disease known as, "St. Anthony's Fire". This disease may have been either ergot poisoning, which causes parts of the body to turn red with a burning sensation, or erysipelas, a local inflammation which causes the skin to turn deep red in colour. Affected hands were often shown ending in flame-like tendrils, swollen, and painted red (Fig. 62). The two pilgrims in the lower half of the first print, hold up reddened (painted red in the original) limbs imploring the saint's help for a cure. Lard was used as a treatment for symptoms of the disease, and may be a

further explanation for the pig in the iconography of this print.(84)

Above the saint, suspended from a pole with "Sanctus Anthonius" written on it, are ex votoes in the shapes of hands and feet. One hand has a Greek cross tied to it, a symbol of Christ's Church. In addition to the two diseased pilgrims, various medieval personalities are shown in the scene. To the right, a woman in a pilgrim hat kneels with her hands in prayer and a knight, next to her, having removed his helmet in reverence for the sacred shrine, offers a rooster in his right hand. The cock was a symbol of the Passion, but, in this instance, it may refer to the disease, ergot poisoning, as it appears in its physical form.(85) Of the three men shown on the left side of the composition, the one standing at the lower edge of the saint is obviously a pilgrim, wearing a broad brimmed hat with badges. The two men shown above him both hold out small objects, one, perhaps, the representation of a sick child and the other a small cross, in this instance, consecrated by touching it to the holy figure.

The theme of the saint with pilgrims is again shown in a woodcut print composition which occurs in three versions. The title is, St. Valentine at Rufach, and all three versions were made between 1480 and 1500. St. Valentine is identified with both a priest and a bishop from Rome in the third century, as well as a bishop of Augsburg when it was the capital of the Roman province of Rhaetia.(86) The remains of the latter were transferred to Passau in the eighth century. It has been suggested that his name was related to the German verb, fallen (to fall), and because of this, he was invoked as the patron saint against epilepsy, "the falling

sickness".(87) He was also the patron saint of lovers. The reason for this stems from a belief, at least as old as Chaucer, that birds were suppose to pair on February 14, the Roman martyrology date for the two Roman Valentines.(88) The St. Valentine shown in these three woodcut prints may have the conflated meanings of both the German verb relationship and the Roman martyrs, as both an epileptic couple and a young healthy couple are shown in the scenes.

The recurrent composition is that of the saint standing to the left, dressed as a bishop, with his right hand raised in the gesture of blessing. To his right, a healthy couple (young lovers?) kneel to recieve his blessing, while those afflicted with epilepsy (?) appear prostrate before the saint. Directly beneath the saint, the wild pig, which may symbolize the demon of gluttony and sensuality, refers to the holiness of the saint and his triumph over worldly sins. The inscription's general meaning is, "St. Valentine pray to God for us". It runs across the top of each print in three slightly altered versions. In two of the prints, the words "zu Rufach" are shown above the kneeling couple. This refers to the location of one of the saint's shrines in the Alsace region between Colmar and Mülhausen.(89) Ex voto articles are seen hanging from a pole below the main inscription.

In the first example, dated 1480, a coat of arms from the priory at Rufach is shown in the lower left section of the composition (Fig. 63). The kneeling man holds an offering and a Greek cross and the woman holds a rooster. A small animal stands next to the man. The next version, copied freehand, depicts the saint without the Rufach arms and dates from around 1480-1500 (Fig. 64). The "ei" in "valentein"

indicates a Swabian artist who has elaborated on the inscription, forcing him to place the last word directly beneath the border at the top right.(90) The rest of the composition, on the whole, has been maintained in the order of the first example with slight variations in the figures' dress and hairstyles. But it is interesting to observe the abstraction of the small animal figure standing next to the kneeling man. In this version, the form has no specific identity.

The last version is an early sixteenth century print (Fig. 65). The woodcut style depicts a much more naturalistic representation of the figures and, due to a greater technical ability, finer details are achieved in describing the scene. The inscription has altered somewhat to, "heiligerhers. (herzliche?) valetin zu rufach bit. G. f. u." ("Dear St. Valentine at Rufach, pray to God for us"). The ex voto items remain in the same order along the pole and are described in almost the exact manner as in the first version. The couple to the right kneel arm in arm, with their hands clasped in front of them (the man holds only the cross in this version; however, the diseased couple below writhe and twist much more realistically than in the previous two versions. There is no considerable change in the composition from the first to the third version, except that the images are portrayed in a more detailed manner in the last print, the result of a better handling of the medium by the artist. These prints demonstrate the repeated use of the medium, specifically the same composition, over a twenty year span for popularizing a specific saint and shrine location.

A final example of a woodcut print showing a saint with adoring lay figures, is St. Sebastian at Lüningen (Fig. 66).

Again, the inscription forming a border at the top of the sheet refers to a specific shrine site, "S. Sebastian bit got fur uns zu lunigen" ("St. Sebastian pray to God for us in Lüningen"). Lüningen was a pilgrimage town in Germany where pilgrims sought help for, among other ailments, swollen tonsils.(91) A pole runs beneath the inscription with ex voto objects hanging from it. In front, to either side of the saint, kneels a man and a young woman both holding objects to be offered, or consecrated, at the shrine. What appears to be a swollen lump on the man's neck may explain his reason for imploring the saint's curative powers. The young woman may simply represent a devout pilgrim showing reverence in the saint's 'presence'. Both figures are shown in diminished size compared to that of the saint, corresponding to the hierarchy of depicting holy figures with lay figures in the Middle Ages.

Today, woodcut prints should be considered useful historical documents recording the devotional practises that were common at shrine sites. To the medieval observer, these prints were a source of valuable information on both a personal and social level. They could find out the name of a saint and the location of the saint's shrine, or else consult the prints for images of saints and their affiliated diseases. The treatment of printed religious images, both as devotional objects and as objects capable of curing disease and preventing disaster, further compounded the complex role of the print, which must be considered a vital protagonist in the religious traditions and beliefs of fifteenth century Northern Europe.

The pilgrimage and related industry of souvenirs.

All levels of fifteenth century society made pilgrimages; the peasants, the bourgeois merchants, and the nobility. Shrines amassed valuable collections from the latter and the presence of wealthy pilgrims encouraged the availability of money-changing and banking facilities in the shrine town; besides, the production of luxury goods intended to serve the needs of upper class tastes.(92) The general economic prosperity of a shrine town was closely connected to the numbers of pilgrims, from all levels, who visited its shrine. As the flow of pilgrim traffic increased, between the thirteenth and fifteenth centuries, many innovations in travel and accomodation resulted. Better roads, or trade routes, were created between towns and, in southern France, protection for travellers was provided in the form of semi-military establishments called, sauvétés.(93) Inns, for the wealthy, were kept under strict regulations and standards and, for the less fortunate pilgrim, accomodation was available in hospitals founded and run by confraternities of the shrine's saint. They supplied a ration of bread and wine, sleeping quarters, and care for the sick. An additional result from the variety of pilgrims that visited shrines in the fifteenth century, was the development of a souvenir industry which provided small devotional objects in a range of materials suited to the individual buying power of the pilgrim.

One of the most common objects was the pilgrim-badge. In some instances, a pilgrimage was imposed by local authorities as criminal punishment.(94) This was especially common in the Low Countries during the fifteenth century. At the

same time, confraternities often required visual devotional objects that could only be obtained at a certain shrine.(95) In both cases, pilgrim-badges were obtained at the shrine and used as testimonial objects to prove that the pilgrimage had been made. In addition to this, pilgrim-badges were believed capable of protective powers which would insure a safe journey home for the wearer. The image of St. Christopher, the patron saint of travellers, is known to have been worn as a pilgrim-badge for this purpose.(96)

The pilgrim-badge was small and usually had ring appendages on it so that it could be sewn onto a scrip (the purse or wallet carried by pilgrims) or hat (Fig. 67). During the twelfth century, the term "sportellae" was used indicating that the badges were commonly affixed to a scrip, or "sporta".(97) One also finds scrips with images embroidered and painted on, although the Church frowned upon such "substitutes".(98) The earliest badges were made of cast metals, such as, tin and lead, a relatively cheap and fast method of production. Some of the stone and copper moulds used in this method of production have been discovered, along with a number of badges, in the Seine and Thames rivers. Merchants and craftsmen with their shops on bridges often lost their goods when the bridge burnt down and deposited everything into the muddy river bed.

The earliest prototypes of pilgrim-badges are found in the live palm leaves brought back from the Holy Lands and in the scallop shells collected on the shores of Galicia near the shrine of Santiago de Compostela. The shell later became the iconographic symbol of St. James' shrine at Compostela. Pilgrims are shown wearing the traditional pilgrim garb and the "Scallop Shell" badges in Figure 68. Both the

palms and the shells were, along with being holy and considered capable of miraculous powers, objects which testified to a completed pilgrimage. A passage from La Vie de St. Thomas Beckett, describes types of images and objects carried by pilgrims of his day:

> .."and they bring phials as a sign of their journey.
> But from Jerusalem a cross is brought,
> and from Rocamadour, Mary cast in lead,
> from Saint James, the scallop shaped in lead"..(99)

Two Holy Water flasks (phials), from the shrine of St. Thomas at Canterbury, a Shell cast in metal, and an image of the Virgin and Child, all pilgrim-badges from the thirteenth to fourteenth centuries, are shown in Figures 69 to 72. A modern version of a Holy Water flask made from plastic, comes from the famous site at Lourdes celebrated for its miraculous cures (Fig. 73).

Originally, the shops located near a shrine catered to the basic needs of the travelling pilgrims. They supplied items, such as, belts, shoes, and medicinal herbs, along with the traditional pilgrim costume; the wide brimmed hat, walking staff, and scrip or wallet. A twelfth century pilgrim's guide to Compostela describes the shops in the courtyard behind the cathedral as follows:

> .."Behind the fountain, as we have said, is the stone-paved courtyard, where they sell the pilgrims scallops that are the badge of St. James; also wine gourds, shoes, scrips of hart's hide, purses, straps, belts, all sorts of medicinal herbs and other drugs and several other things are sold there as well"..(100)

As social classes developed and trade with pilgrims increased throughout the fourteenth and fifteenth centuries,

the pilgrimage souvenir industry diversified and adapted its products. Disputes between the priests and the local craftsmen who were making these objects arose and solutions were sought to settle arguments about what images would be made, who would make them, and out of what materials. These were recorded in local town archives. By looking into these conflicts, one can follow the iconography which was used and, more importantly, the introduction of new working materials that evolved as a result of satisfying the interests of both parties.

An example of one attempted settlement is found in a manuscript at the Hotel-Dieu du Puy.(101) In the early fifteenth century, a rector of the hospital at Le Puy, Jean Lejeune, tried to settle the question over badge sales and production. Assuming that he possessed a monopoly over the whole souvenir market, he allowed silversmiths and merchants to sell and make specific types of badges which did not conflict with those made and sold by the hospital. He allowed them trade in silver badges depicting the Madonna and in scripts bearing paper badges of St. Catherine. They were not to sell scrips bearing badges with the Madonna's image. The merchants claimed that they could not sell enough of the silver badges, "a luxury item", in order to make up lost profits from less expensive materials.(102) They continued to make and sell scrips bearing the Madonna's image rather than that of St. Catherine (on paper?), perhaps because this was a more popular image, and sold them on the outskirts of the town.(103) The choice of subject matter may have resulted simply from the economic feasibility of what subjects sold better than others. Many successful shrines produced more than one type of badge, frequently having one image on the

front and another on the back. Inscriptions were sometimes added, specifying the shrine which made the badge and identifying where the badge was obtained or, instead of words, a symbol was substituted.(104)

There appears to have been an active search for new materials used to make pilgrim-badges, if not so much to satisfy an existing market (offering a selection of prices), but to also satisfy the economic interests of both the clergy and town craftsmen producing souvenir trinkets. Besides tin and lead (the metals used in the early production of badges) new materials, such as, gold, silver, bronze, copper alloys, and silvered leather, known as pellis argentee, were being used at the height of souvenir production in the fourteenth and fifteenth centuries. A second contemporary source provides evidence of badges made of parchment and paper,... "effigiem seu ymaginem beate Marie in corio deu papiro".(105) In fact, it would be reasonable to suspect that printing was used to make the small images on paper or parchment; however, examples of small printed pilgrim-badges, or prints that may have been used as pilgrim-badges, are very rare.

Examples of painted badges on parchment were found in the abbey at Wienhausen (Fig. 74). This group of eight identical motifs was painted on one piece of parchment, presumably to be cut out at a later stage in the production into small, rectangular shapes (about 4,5 x 3,8 cm). Two other painted examples from Wienhausen actually have small holes around their edges, indicating that they were worn as pilgrim-badges or amulets.(106) A pilgrim-badge painted on leather from around 1500, depicting an Angel Holding the Sudarium is shown in Figure 75. This was also found at the

Wienhausen abbey. The image of the Holy Face is similar to the eight images painted on the single sheet of parchment. These examples display a conventionalized image; that is, the Holy Face is shown as a frontal portrait, coloured almost opaque so that the head is shown in silhouette (outlined) with the hair hanging to either side of the face ending in points. The beard is also pointed, sometimes ending in two points. This particular stylized image is the subject of two paintings by the Master of St. Veronica, active in the first quarter of the fifteenth century (Figs. 76 and 77).

The Holy Face motif, as a pilgrim-badge in a small, rectangular format, is found repeatedly in several paintings and woodcut prints from the late fourteenth to the early sixteenth centuries. The motif, as a pilgrim-badge, is shown in all of the woodcut prints (previously cited) representing St. Bridget (Figs. 29 to 34). In each composition, the saint's hat is shown with a small image of the Holy Face on it. Its use in this context may refer to the saint's devotion to the Passion. The "cult of the Holy Face" was a subsidiary devotion originating out of the "cult of the Passion".(107)

The first painting, in which the Holy Face badge appears, is a panel painting from Cologne, St. Elizabeth Giving Shelter to Pilgrims by an anonymous master and dated around 1380-90 (Figs. 78 and 79). The pilgrim being led by the saint wears a Holy Face badge between two other badges. A second example is shown in a detail from a panel painting now in the Germanisches Nationalmuseum, Nürnberg (Fig. 80). The theme of the painting is Christ at the House of Emmaus, made in Cologne around 1460 by an anonymous master. A pilgrim in

the scene wears three badges on the brim of his hat: the Scallop, the Holy Face, and the Three Miraculous Hosts. The next painting is a fragment from an altarpiece painted by the Master of the St. Bartholomew Altarpiece in Cologne, ca. 1470 (Fig. 81). Only the head of a pilgrim, possibly that of St. James, is shown in this detail and on his hat are the badges of the Holy Face, the Scallop, and the Staff, identifying him as a pilgrim. The Holy Face badge appears on the hat held by St. Alexius, standing next to St. Agnes, in a detail from an altarpiece in Cologne (Fig. 82). The badge is prominently displayed by the positioning of the hat in the saint's hands. A smaller badge, probably made of metal, is shown next to the Holy Face badge. The next painting, St. Lawrence Shows the Treasures of the Church, is from the Circle of the Master of the St. Ursula Legend, dated ca. 1510 (Figs. 83 and 84). The pilgrim figure standing to the far right of the scene wears several pilgrim-badges on his hat, two of which are the Crossed-Keys of Rome and the Holy Face. The last example of a pilgrim wearing the Holy Face pilgrim-badge is found in a detail from a painting by Quenten Massys in the Alte Pinakothek, Münich, dated 1519 (Fig. 85). The pilgrim's hat has the badges of the Crossed-Keys of Rome and the Holy Face on it. In each case cited above, the Holy Face badge is depicted in a square, or rectangular, format and the badge itself must have been fairly small in relation to the other badges shown and the likely size of the hats.

An image of the Holy Face with the Crossed-Keys and Papal Tiara, drawn and painted on parchment, is shown in Figure 86. The size of this badge is 3,5 x 2,5 cm and it is attached to an engraving (previously cited) attributed to the Master "S"

made in Brussels around 1505. The printed scene shows Christ as the "Man of Sorrows" with symbols of the Passion. The Holy Face motif, in this instance, along with being a pilgrim-badge attached to the engraving, may also refer to the Passion. The Crossed-Keys (of Rome) and the Papal Tiara most likely symbolize the papal recognition of the indulgence which borders the engraving.(108) A printed image of the Holy Face is shown in a metalcut on parchment. It was made in Germany, around 1470-80, and measures 5 x 4,2 cm (Fig. 87). The composition is simple, showing only the Face and a nimbus around the head. A decorative border encircles the image. It is not unlikely that this printed image was intended to be used as a pilgrim-badge, along the same line as those badges of the Holy Face shown in the paintings cited above.

It was suggested that the Master E.S. invented the composition which combines the images of St. Peter and St. Paul with the Papal Tiara, the Crossed Keys of Rome, and the image of the Holy Face on the Sudarium (traditionally held by St. Veronica).(109) He made several engravings for the celebration of the monastery at Einsiedeln in 1466, one of which was an engraving of the above theme shown in Figure 88. This engraving is 15 x 10,8 cm, and thus not likely to have been used as a pilgrim-badge. The Papal Tiara and Crossed-Keys of Rome, again, represent papal recognition of the proceedings at Einsiedeln. The Master E.S. appears to have combined a popular devotional image, that of the Holy Face, with the papal symbols and made one further cross-reference to the Sudarium. This famous relic, held in Rome since the eighth century, is shown held between the two saints, Peter and Paul. In this instance, the master's inventiveness has produced a

somewhat complex iconography.

Several woodcut prints were made following the Master E.S. composition, such as those shown in Figures 89 and 90. A third example fits the requirements for being a pilgrim-badge (Fig. 91). The print, The Sudarium Held by Sts. Peter and Paul, is 5 x 3,6 cm and shows the familiar motifs: the Holy Face, Papal Tiara, and Crossed-Keys of Rome. It is the only other small print, along with the metalcut, which depicts the Holy Face in a small enough format to suggest that it was used as a pilgrim-badge. It does seem relevant, here, to include a woodcut print which, though not an image of the Holy Face, does have the characteristics of being a pilgrim-badge. The print represents St. Roch, a pilgrim saint, and has an inscription encircling the composition (Fig. 92). The print itself looks like a cast, metal badge and its size, 4,5 x 4,5 cm, would not have hindered its use as a pilgrim-badge.

Wearing these small images as pilgrim-badges on hats and articles of clothing must have resulted in a relatively short 'lifetime' for each print. It may be for this reason that so few examples can be found and those which are likely to have been used as pilgrim-badges are painted or printed on parchment, a more durable material than paper.

In conclusion, along with written and oral methods of promotion, printed images were used as a means of popularizing a saintly cult and its shrine. Prints could be distributed on a large scale with their original meaning 'intact'. Some highly organized groups, such as, the Brigittine convents and monasteries, produced large numbers of prints depicting a specific saint. Other prints representing various saints came from such diverse origins as Lüningen and Rufach. Shrine sites were also represented, if not by the saint, then by miracles that occurred there. The overemphasis on the "powers" of religious objects and images led to their use as vehicles of superstition mixed with religious devotion. Pilgrims visited shrines in order to expose themselves to efficacious, holy objects displayed there and attempted to take with them the "powers" of the saint, which they so devoutly believed in. The pilgrimage was an important religious event that grew in popularity during the fourteenth and fifteenth centuries among all social levels. The pilgrims required and wanted visual evidence of their pilgrimage and objects for this purpose were supplied by the clergy and lay craftsmen working in shrine towns. The increasing market led to a variety of materials used to make souvenir trinkets. Among these items were painted and possibly printed pilgrim-badges on parchment and paper. Some of the functions cited in this discussion may have a bearing on the scarcity of fifteenth century woodcut prints. The prints were used in the religious acts of daily medieval life, some of which may have meant their inevitable destruction.

FOOTNOTES

CHAPTER TWO

1. "With the increasing availability of paper in Europe [by the fifteenth century] the production of identical printed pictures from both wood and metal was natural and inevitable." W. Chamberlin, Woodcut Printmaking, (London, 1978), p.12. Also; "The rise of large figurative woodcuts and the accompanying crafts were thus the result of a variety of changing factors, the most important of which was the availability of paper." R.S. Field, Fifteenth Century Woodcuts and Metalcuts from The National Gallery of Art, (Washington, D.C., 1965), p.1.

2. An example of this type of 'substitution' (building shrines in centres of previous pagan religions) is found in the subsequent shrines built in Le Puy, a chief town in southern France. Le Puy was once a centre of Celtic worship and pilgrimage. A Druid altar once stood on Mount Anis and was replaced in Roman times by a temple to Jupiter. As Christianity was introduced to the area, a shrine of Our Lady of Le Puy was built in the town and for centuries thereafter (even after the Reformation) Le Puy remained one of the greatest Marian shrines in France. V. and E. Turner, Image and Pilgrimage in Christian Culture, (Oxford, 1978), p.200.

3. H. Delehay, The Legends of the Saints, (London, 1907), Chapter VI, "Pagan Survivals and Reminiscences." Also; According to J.A. MacCulloch, Medieval Faith and Fable, (London, 1932), Christianity readily assumed the pre-existent patterns of former pagan religions, p.120.

4. The Greeks looked upon their images of gods as a means of honouring the god, but they also considered it a means by which the god could bestow benefits upon them. E. Bevan, Holy Images, (London, 1940), p.24.

5. Delehaye, op. cit., p.164.

6. Tombs of Aeneas existed in Berecyntus in Phrygia, at Anea in Macedonia, and on the shores of the Municius near Lavinium. Delehay, op. cit., p.165.

7. D.H. Farmer, The Oxford Dictionary of Saints, (Oxford, 1978), p.xiv.

8. Farmer, op. cit., p.xv.

9. Farmer, op. cit., p.xvi.

10. Ibid.

11. Delehaye, op. cit., p.167.

12. Turner, op. cit., p.4.

13. A. Hyatt Mayor, Prints and People: A Social History,

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(Princeton, 1971), pp.9-10.

14. Turner, op. cit., p.4.

15. E. Cohen, "In the Name of God and of Profit, The Pilgrimage Industry in Southern France in the Late Middle Ages," Diss. Brown University, 1976, p.7.

16. An example of increased religious fervour as a result of plague epidemics is given in a passage from, Walsingham Way, by Colin Stephenson, (London, 1970), pp.41-42: ..."It is not surprising to find the plague breaking out at [Walsingham] shrine, because the upsurge of religious fervour [as a result of plague epidemics] must have sent even greater crowds along the pilgrim way."

17. B. Tuchman, A Distant Mirror: the calamitous fourteenth century, (London, 1979), p.365.

18. E. Cohen, "In Haec Signa: The Pilgrim-Badge Trade in Southern France," Journal of Medieval History, Vol. 2, October, (1976), p.204; The shrine at Le Puy held a jubilee when Good Friday coincided with the date, March 25, the Feast of the Incarnation. There were three jubilees celebrated in the first half of the fifteenth century in: 1407, 1429, and 1440.

19. An English pilgrim's guidebook to the Holy Lands included such useful facts as, "the mileage between towns, rates of exchange, a long and very informative shopping list, a tariff of fees and tips to be paid in the Holy Land, word lists of Greek, of 'the language of Moresque' and 'of Turkey', and, in as mercantile a spirit, an exact record of the indulgences to be gained at the Holy Places." H.F.M Prescott, Jerusalem Journey, Pilgrimage to the Holy Land in the Fifteenth Century,(London, 1954), p.28. This book is the translation and paraphrazing of writings by a German monk, Friar Felix Fabri from Ulm, who made several pilgrimages to the Holy Lands in the late fifteenth century.

20. Cohen (thesis), op. cit., p.23.

21. In the St. Foy literature, the origin of the "Chanson" is unknown, although the translation mentioned in it occurred at Conques and the miracle also. Cohen (thesis), op. cit., pp.86-87.

22. MacCulloch, op. cit., p.134.

23. Tuchman, op. cit., pp.311-313.

24. E.R. Chamberlin, Life in Medieval France, (London, 1967), pp.130-133.

25. Chamberlin, op. cit., pp.128-129.

26. E.W. Hoffman, "Some Engravings Executed by the

FOOTNOTES: CHAPTER TWO continued:

Master E.S. for the Benedictine Monastery at Einsiedeln," The Art Bulletin, XLIII, (1961), p.232; "A manuscript in the archives at Constance records that one hundred thirty thousand "Zaichen" (Zeichen) were sold during the four day celebration which began on September 14. These "Zaichen" evidently consisted of engravings, drawings, medals, coins, reliefs, and even blockbooks, and since the Master E.S. prints were made for the same occasion they most logically formed a part of this exceptionally prolific production of devotional items. While Einsiedeln as a pilgrimage church consistently and normally offered a few devotional objects for sale to pilgrims, the effort of 1466 was unusual not only because it was for a special anniversary, but also because it was designed to alleviate the financial embarassment in which the monastery found itself at the time."

27. M.G. Dickson, "Patterns of European Sanctity: the cult of saints in the later Middle Ages with special reference to Perugia," Diss. Univ. of Edinburgh, 1975, p.21.

28. Field, op. cit., No.244.

29. E. Nockemann, "Der Einblattholzschnitt des XV. Jahrhunderts und seine Beziehung zum spätmittelalterlichen Volksleben," Diss. Univ. of Cologne, 1940, p.27.

30. This information was provided by a brochure from The National Gallery of Art, Washington, D.C. describing the paintings in Gallery 39. Other paintings in which woodcut prints as devotional images appear are: "The Annunciation", Robert Campin, ca. 1428, Brussels, (St. Christopher); "St. Benedict", Hans Memling, ca. 1487, Uffizi, Florence, (Image of a Canon ?); "Das Wunder des Siebes", Jan Mostaert, ca. 1500, Brussels, (Image on paper over fireplace?); "The Annunciation", Gerard David, ca. 1490, Detroit Institute of Fine Arts, (Moses, or, God the Father); "Cardinal Albrecht von Brandenburg as St. Jerome in his Study", Lucas Cranach the Elder, ca. 1520, Kassel: Hessisches Landesmuseum (Vera Icon).

31. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 65, "Collection of James McGuire, N.Y.," W.L. Schreiber, 1928, No.25. For further information about the woodcutter "Casper" see: J. Rosenthal, "Casper, ein Formschneider des XV. Jahrhunderts," Beiträge zur Forschung Studien aus dem Antiquariät, Jacques Rosenthal, 1920-30.

32. R.S. Field, Fifteenth Century Woodcuts, (Metropolitan Museum of Art, 1977), p.8.

33. C. Dodgson, Woodcuts of the Fifteenth Century in the Fifteenth Century in the John Rylands Library, (Manchester, 1915), No.IV.

34. Nockemann, op. cit., p.28, and, Mayor, op. cit., No.91.

35. A.M Hind, An Introduction to a History of Woodcut,

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Vol. 1, (New York, 1963), p.76.

36. Devout nobles carried portable altarpieces with them when travelling. Tuchman, op. cit., p.236. Also, the small, travelling altarpiece described in the catalogue from The National Gallery of Art in Washington, D.C. (Field, 1965, No.78), was owned by a nun from the convent of St. Clara in Mülhausen. For further information about this piece, see: E. Schilling, "Zur Geschichte einer Basler Kanontafel des XV. Jahrhunderts," Zeitschrift für Schweizerische Archaeologie und Kunstgeschichte, IX, (1947), pp. 147-150.

37. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 64, "Gotha Herzogliches Museum," W.L. Schreiber, 1928, No.5.

38. Field (1965), op. cit., No.78; This small altarpiece has a "Lamentation" scene, based on a composition by the Master E.S. (ca. 1460) and is printed on parchment with two pages of text from the Mass. It was made by Lienhut Ysenhart working in Basel during the last decade of the fifteenth century.

39. G. Gall, Leder im europäischen Kunsthandwerk, (Offenbach am Main, 1965), fig. 113.

40. Field (1965), op. cit., No.276. For an interesting discussion concerning the similarities between the Holy House at Loreto and that which was built in Walsingham, England (both Marian pilgrimage centres), see: Turner, op. cit., Chapt. V.

41. Hoffman, op. cit., pp.231-232. The Einsiedeln monastery sold engravings commemorating the fifth centenerary celebration of the church's miraculous dedication (966) in 1466. The date appears on all three compositions produced by the Master E.S. for this occasion.

42. Field (1965), op. cit., No.277.

43. Field (1965), op. cit., No.229.

44. Turner, op. cit., p.196. "Paulinus (Epistle 31) says that part of the cross of Jerusalem gave off fragments without diminishing... The Nails of the Cross had the same power of reproducing themselves," MacCulloch, op. cit., p.140.

45. W. Bonser, "The Cult of Relics in the Middle Ages," Folklore, LXXIII, (1962).

46. Prescott, op. cit., p.214.

47. Ibid.

48. Dickson, op. cit., p.221.

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49. Dickson, op. cit., p.226.

50. Dickson, op. cit., p.231. The sale of pseudo-relics by wandering monks was described by St. Augustine (d.430); hence, the situation was not unique to the latter part of the Middle Ages. Another entry in the writings of Friar Felix Fabri, in reference to a German knight who intended to purchase a relic of the Holy Innocents, describes his inquires made into this matter. He,"learnt that the Saracens of Egypt did a brisk trade in fakes of this particular class of relics. Dead bodies of young or stillborn children were procured, then 'Saracens and Mamelukes ... slash them with knives... embalm the bodies... and sell them to Christian kings, princes, and wealthy people'...", Prescott, op. cit., p.215.

51. Dickson, op. cit., pp.226-227.

52. Cohen (thesis), op. cit., p.71.

53. G. Chaucer, The Canterbury Tales, trans. N. Coghill, (London, 1951), p.38. The Pardoner is referred to in Image and Pilgrimage in Christian Culture, as a "religious conman" one of a type or group of wandering men known to sell indulgences and relics "by the bagful", Turner, op. cit., p.196.

54. Tuchman, op. cit., p.427.

55. Ibid.

56. Dickson, op. cit., p.221.

57. Farmer, op. cit., pp.386-387.

58. W.R. Jones, "Saints in Service: The Political and Cultural Implications of Medieval Hagiolatry," Cithara, X, (1970), p.34.

59. Bonser, op. cit., p.239.

60. Field (1965), op. cit., No.259.

61. This print was sold in the Spring of 1980 by C.G Boerner's in Düsseldorf. I am grateful to Fr. Ruth-Maria Muthmann and Dr. Marianne Küffner for their assistance in obtaining photographs of the print for me and allowing me to use them in this thesis. The translation of the indulgence was obtained by them from Dr. Ludwig Falkenstein in Aachen and Dr. Hatto Küffner in Düsseldorf.

62. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 65, op. cit., Schreiber suggests that the belief may have been that the Holy Lance relic had made the cut out in the printed image.

63. M. Hamilton, Incubation or the cure of disease in

FOOTNOTES: CHAPTER TWO continued:

Pagan Temples and Christian Churches, (London, 1906).

64. E. Cutts, Scenes and Characters of the Middle Ages, (London, 1872), p.173. "Roses from Jericho were said to be of assistance to barren women; reeds from St. Catherine's fountain at Sinai to women in labour; a piece of stone from the Church of St. Anne in Jerusalem to pregnant women. Water from Jordan had many remarkable properties which not only made it desirable for use at baptism, but which also created a demand for it among 'warlocks and witches'." Prescott, op. cit., pp.214-215.

65. Chaucer, op. cit., pp.259-260.

66. L. Thorndike, History of Magic and Experimental Science, Vol. 1, (New York, 1934), p.129.

67. Mayor, op. cit., fig. 12.

68. Cohen (thesis), op. cit., pp.169-170. Edwyn Bevan discusses the function of consecration in various religions in Holy Images, op. cit., Lecture I, pp.1-45. In Fr. Fabri's writings, it is stated that, "Many pilgrims doubtless, had like Felix brought with them rings and other jewellery, whether their own or not, to lay upon the Holy Places,".. Prescott, op. cit., p.212.

69. I. Origo, Merchant of Prato, (London, 1957), p.289.

70. Tuchman, op. cit., p.236.

71. Dickson, op. cit., pp.223-224. The following passage describes the activities of a group of pilgrims having just arrived on the banks of the river Jordan: "Not only their persons, but the pilgrims' belongings, were the better for immersion. Some of the knights went into the water fully dressed, 'saying that they would always be lucky in those clothes hereafter'; at home those garments, Felix says, would be laid up 'like treasures', to be worn for their lucky properties, whenever there was fighting toward. Some, as a more convenient and comfortable means of attaining the same object, laid in the river lengths of linen or wool which could be made up into clothes afterward. Others dipped and baptized little bells which were for sale for this purpose at Venice; their note would, as a result, give protection against storms and thunder. Many busied themselves in filling 'jars, flasks, and glass bottles' with Jordan water, reputed to be of great efficacy against warlocks and witches".. Prescott, op. cit., p.158.

72. Thorndike, op. cit., pp.295-298.

73. Origo, op. cit., pp.298-299.

74. W. Stechow, "An Early Woodcut with the Hand of God," Allen Memorial Art Museum Bulletin, XI-XV, (1954-58), pp.7-15.

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75. Thorndike, op. cit., pp.282-283.

76. Turner, op. cit., p.197. "There was, indeed, a surplus of signifiers, of visible and tangible symbol vehicles, amounting to an inflation of symbolic currency"... The overemphasis on religious objects and images led to their use as, "fetishes operating by principles of sympathetic and contagious magic, rather than serving as vehicles of religious and ethical ideas". These comments are made in Chapter Five, "Locality and Universality in Medieval Pilgrimages."

77. Dickson, op. cit., p.208.

78. St. Wendelin was born in Ireland, son of a Scottish king, and came to Trier, Germany while on pilgrimage. He remained there as a hermit and tended swine. He is pictured in art as a pilgrim, sheperd, monk, and an abbot. He was the patron saint of peasants and herdsmen and also invoked for protection from pestilence. Little is known of his martyrdom. "Wendelin, St.," New Catholic Encyclopedia, 1967, XIV, p.874.

79. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 3, "St. Gallen," Dr. A.D. Fäh, 1906, No.22.

80. J.B. Sykes, ed., The Concise Oxford Dictionary, Sixth Edition, (Oxford, 1976), p.369.

81. D. Kurhmann, Die Frühzeit des Holzschnitts, (München, 1970), No.26.

82. Bells were also hung around animals' necks to protect them from disease. Farmer, op. cit., p.20.

83. Kuhrmann, op. cit., No.26.

84. A. Shestack, Fifteenth Century Engravings of Northern Europe from The National Gallery of Art, (Washington, D.C., 1967), No.66.

85. Ergot, in Old French, is argot, or a cock's spur. In this instance, the cock may refer to the disease, ergot poisoning.

86. Field (1965), op. cit., No.247.

87. Dickson, op. cit., p.88.

88. Farmer, op. cit., p.388.

89. Field (1965), op. cit., No.247.

90. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 2, "Pestblätter," W.L. Schreiber, 1918, No.38.

91. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 2, op. cit., No.15.

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92. Cohen (thesis), op. cit., p.36. A popular pilgrimage site and embarkation point for pilgrims setting off to the Holy Lands, Venice had an extremely well-run pilgrimage tourist industry. There were inns licenced with the Senate and guides to the holy sites. "The Venetian State had regularly appointed officials called Cattaveri, and, under them, a number of 'Piazza Guides'. At the beginning of the century (15th) two of the twelve Piazza guides must be on duty during every week, keeping, from dawn to dusk, their station either on the Rialto or in the Piazza of St. Mark, and these two must have command of more than one foreign language between them." They helped the pilgrims obtain the correct exchange for their money, interpreted for them, and brought them into contact with the captains of pilgrim galleys, advising them on agreements made for their journey. Prescott, op. cit., p.46.
The flow of pilgrims through Venice meant 'big business' for the city. The organization with the maximum efficency insured the continued popularity of the city as a pilgrimage site.

93. Cohen (thesis), op. cit., p.101.

94. Turner, op. cit., pp.195-196.

95. Cohen (thesis), op. cit., pp.75-76.

96. Nockemann, op. cit., p.27.

97. Cohen (thesis), op. cit., p.146.

98. Cohen (thesis), op. cit., p.174.

99. Cohen (thesis), op. cit., p.143.

100. Cohen (thesis), op. cit., pp.140-141.

101. Cohen (thesis), op. cit., pp.166-167.

102. The cost of pilgrim-badges is difficult to assess, but there remains some documentation on this aspect also. In 1425, at Bourlogne-sur-mer, the Duchess of Burgundy paid 62 sous for; one gold, three gilt, and thirteen silver badges. In 1455, the Duchess of Orleans paid 25 sous tournois for a gold badge of Saint Catherine of Fierbois and, in 1504, in Paris, "plain lead badges sold for 12 sous per twelve dozen (144)". Cohen (thesis), op. cit., pp.149-150.

103. Ibid.

104. The ship was a symbol of Burlogne-sur-mer. Cohen (thesis), op. cit., pp.147-148.

105. Cohen (thesis), op. cit., p.145.

106. H. Appuhn and C. von Heusinger, "Der Fund Kleiner Andachtsbilder des 13. bis 17. Jahrhunderts in Kloster

FOOTNOTES: CHAPTER TWO continued:

Wienhausen," Niederdeutsche Beiträge zur Kunstgeschichte, Vol. 4, (1965), pp.157-178,(plus catalogue, pp.179-238), No.37, Holy Face, painting on parchment, 2,8 x 1,9 cm; No.38, Holy Face, pen drawing on parchment, 2,8 cm in diameter; pp.200-202.

107. The cult of the Passion was based on the belief that man's sin was the personal wounding of Christ and that sin must be put off daily in order to avoid adding to Christ's suggering. Among the "subsidiary devotions" that arose from the cult of the Passion were: the cult of Holy Relics, devotion to the Holy Infant, the Holy Face, and instruments of the Passion, as well as, to the Sacred Hearts of Jesus and Mary, and the Sorrows of Mary. "Passion," New Catholic Encyclopedia, 1967, X, p.1060.

108. Hoffman, op. cit., p.233.

109. Hoffman, op. cit., pp.236-237. It may be that the Master E.S. invented the iconography of Peter and Paul Holding the Sudarium, as it does not occur in the fifteenth century until this print was made for the Einsiedeln celebrations.

PART II. FORM

CHAPTER THREE

FIFTEENTH CENTURY PRINTMAKING METHODS: COMMON AND RARE.

An explanation of the common forms of printmaking in the fifteenth century, woodcut and engraving, is necessary for a basic understanding of the materials and prodecures used and followed in making the objects which we, as historians of fifteenth century prints, are concerned with. The visual and sometimes physical characteristics of printed images depends almost entirely on what type of method was employed in making them. A knowledge of woodcut printmaking and engraving also enhances the contrast recognized when comparing these more common forms of printing with examples made from the more rare techniques: metalcuts, flock-prints, embroidery-prints, sealprints, pasteprints, and sealpasteprints. The fifteenth century was an extremely interesting and productive period, especially in the experimentation with different printmaking methods and, in some cases, the manner in which a printed image was decorated.

We will first look at the methods employed in the production of woodcut prints and engravings. The woodcut printmaking method is thought to have originated in the making of printed designs on fabric, which also used a matrix cut from a wood-block. Throughout most of the fifteenth century, the entire production of a woodcut print was carried out by one craftsman. However, in the latter part of the century the production diversified, employing the skills of three craftsmen: the designer, cutter, and printer. The design was cut into a wood-block, which was a lengthwise section cut from

the tree trunk. The lines and area around the design were cut away from the surface using small knives and gouges (Fig. 93). The remaining relief lines in the wood-block were inked with a stuffed leather "ball". These lines created the printed image and, for this reason, woodcut prints are known as, "relief prints". The earliest method of printing an image from a wood-block matrix was to place the sheet of paper over the inked block and rub the paper by hand. This usually resulted in a shiny surface left on the verso of the impression. It also printed a design that was uneven in the dispersal of ink in each line. This printing method is known as, "friction printing". A printing-press was used for making prints after the second half of the fifteenth century, and prints made from a press display a greater continuity of tone and line quality.

The number of woodcut prints that could be made from a single wood-block matrix was virtually limitless, especially when printed by friction. The block did not wear down in any appreciable amount; in fact, the end of production from one block usually came when the block became cracked, or broke into pieces altogether. Because of the relatively inexpensive material (wood), simple method of carving the image, and potential numbers of woodcut prints that could be made from one block, this printmaking method, for most of the fifteenth century, remained the form used for large numbers of popular religious images. They could be sold, either plain or coloured, at an affordable price to the general fifteenth century laity.

Engravings pose a different set of criteria with regard to materials and working techniques. The engraving method of printmaking originated in the workshops of goldsmiths and

silversmiths. These craftsmen were accustomed to making incised designs of a delicate and detailed nature on metal surfaces. Because the method began with craftsmen who made detailed compositions on small surfaces (in terms of working area), the printmaking technique also reflects this use of fine lines, limited surface area, and a more descriptive composition. The line quality was one inherent to working on metal, as opposed to those created from a coarser material, such as wood.

Artists probably began keeping records of their designs and patterns by making printed impressions of them on paper. In Italy, the Florentine goldsmiths and silversmiths quite frequently worked in a jeweller's medium known as, "niello". This method of decorating a silver, or gilt, surface began first, by making an incised design on the metal surface. This was then covered in a powdered mixture of: sulphur, silver, lead (or copper), and this mixture was known as, "nigellum". When the metal was heated, the powder liquified and filled in the incised areas, along with some of the raised areas of the surface. It was then burnished down so that the original design showed up in black on silver, or gold. The Florentine craftsmen made impressions while working in niello, and by doing so, found that they could record various compositions and patterns on paper for future reference. These printed 'records' represent one of the most important features of printmaking, that is, to duplicate exact copies; henceforth, prints replaced earlier, less precise methods of documenting designs, in the form of hand-drawn illustrations in sketchbooks and manuscripts.

In making an engraving, the design is first cut into a metal plate. Most of the fifteenth century plates were fairly

small, due in part, to the working methods of jewellers and also to the cost of metal. The metal most commonly used was copper. It is soft enough to engrave by hand but because of this, it also loses its original shape in the course of printing. The type of tool used was a "burin", or "graver", an instrument made from a bar of metal with a V-shaped cross-section and a sharpened end (Fig. 94). The handle, made from wood, rests in the centre of the hand with the fingers placed on the metal shaft. As it moves along the metal surface, it gouges out metal, creating V-shaped furrows. The displaced metal pushed up along the edge of the incised line is known as the "burr" and was usually scraped off in an engraved design; as a result, the clarity and sharpness of the printed line was increased.

Another method of working in metal is known as, "dry-point". In this technique, a thin bar of metal with a tapering point, held in the hand like a pencil, is used to make the incised lines. The burr was not removed and the printed line displays a blurred or "shadowed" edge to it (Fig. 95). The burr, however, wears down quickly through repeated printing. This working technique suggests a cognitive relationship with that of silver-point. Making a silver-point drawing on prepared paper was a requisite in the training of fifteenth century artists. It necessitated a great amount of skill and accuracy. The short, sharp (even sketchy) strokes seen in early engravings which were made by using dry-point, suggest that the silver-point training influenced the manner in which dry-point was done in the earliest attempts at making printed images from metal plates.

Engraved metal plates are inked by filling in the incised lines and removing the ink residue from the plate surface,

wiping it with muslin and then with the flat side of the hand. The plate is then covered with a sheet of dampened paper and placed on the press-bed, cushioned by layers of felt and blankets. It is then passed between two rollers which forces the paper into the inked lines. Because of this printing method, engravings are known as, "intaglio prints". The pressure used in making an engraved print also leaves a mark around the print composition. This mark is the result of the plate edges having been pressed into the damp paper. If the plate mark is still visible on an engraving, it is considered by connoisseurs, to be a valuable characteristic of the print.

The number of good impressions which can be taken from one plate is limited to the changes that occur in the design on the plate through printing. A mechanical press used to print engravings, flattens the plate by minute degrees every time an impression is made. An indication of a late impression is the dissappearance of the finer lines in the design which, because they were not originally deeply incised into the metal, are the first to wear down (Fig. 96). An early impression is generally known for its striking, richly coloured, opaque lines which have a velvety surface quality. If drypoint has been combined with engraving, then an early impression will also display a subtle shading around those lines which still have the burr intact on the plate surface.

Engravings are similar in appearance when compared to pen and ink drawings and this, along with their production in limited numbers, resulted in a higher value placed on their ownership. Even today, an engraved print or one made from a similar use of materials, such as, an etching, is considered a more expensive print than that made by a method in

which large numbers of prints can be produced, such as, woodcut printmaking, lithography, and serigraphy.

In addition to the more common methods of printmaking employed during the fifteenth century (woodcut prints and engravings), some methods are specific to the second half of that century and have not been used since. One of these was used to make prints known as "metalcuts" or "dotted prints". Metalcut prints are characterized by having almost the entire design created by small motifs and dots made from punches and finely hatched lines made by gravers (Fig. 97). Patterns of these motifs are found throughout the print composition. The technique originated in jewellers' workshops. The decorative aspect of these designs could be explained by the interests of these craftsmen who would have been inclined towards producing highly ornamented compositions. The designing tools made incised areas in the metal plate. However, it was the relief surface area which was inked and printed in the same manner as woodcut printmaking. The main lines of the image are created in white. In some metalcut prints, small printed circles which appear near the edges of the compositions, suggest that the metal plates were nailed down on wood-blocks before being placed in the printing press. They could also indicate that the metal plate was fastened onto a sturdy surface, such as a wood-block, while the design was being made.(1)

Two other printmaking methods, originating in and specific to the second half of the fifteenth century, were intended to make prints that replicated designs in textiles and richly embroidered fabrics. The first group of prints are known as, "flock-prints". A sheet of paper was covered in a golden brown paste and impressed with a fabric texture probably made

by a roller.(2) The design was then printed in a "sticky brown-red ink" and powdered wool was sprinkled over this, adhering to the paste and creating a surface which looked like velvet.(3) The broad lines of these designs suggest the use of a wood-block matrix. An example of a flock-print in the Ashmolean Museum, Oxford, The Crucifixion, shows a brownish coloured paste with the composition created in red wool (Fig. 98).(4) In one case, the flock-print of St. George, it was suggested that the wool alone created the image on the golden brown paste without the intermediary printed ink design (Figs. 99 and 100).(5) It is possible that the wool powder was sprinkled through a stencil onto the wet textured paste background, thus, alleviating the need for a second layer of adhesive. A 'recipe' in a manuscript from the abbey of St. Katherine in Nürnberg describes a method for printing with wool which necessitated making a sticky varnish foundation and a fine wool powder.(6) This printing was done on linen originally, however, no flock-prints on cloth now exist.

The second group of prints known as "embroidery-" or "tinsel-prints", are examples of an applied decoration on printed images. They testify to the experimental nature of fifteenth century printmakers who attempted to vary the appearance and treatment of ordinary printed images. The term embroidery-print is derived from the richly encrusted decoration found on these prints, which made them look like embroidered materials on fabric. A paste (perhaps gum) was applied to certain sections of the design and various substances, such as, quartz crystals, small pieces of thin metal, and sometimes a combination of both, were adhered to this paste foundation. An especially beautiful example of an embroidery-

print is, The Annunciation, which has a combination of both crystals and small particles of metal (brass?), seen on the robes of the angel, Gabriel (Fig. 101). A woodcut print of The Christ Child with a Cross has small pieces of gold outlining the nimbus behind the Child's head (Fig. 102).

Three additional categories of rare fifteenth century printmaking techniques are: sealprints, pasteprints, and sealpasteprints. A brief introduction to these types of prints can be summarized as follows. Sealprints are embossed, low-relief images made in paper. Their size, format, and the notion that they are images made from the pressure of one incised form upon a surface, led print historians to place them in the general sphere of fifteenth century prints. The special heading, "sealprint", was suggested by their appearance as embossed, colourless reliefs similar to those made by seals in wax, or paper. Pasteprints derive their name from the use of a "paste" substance on the print surface. A matrix was pressed into this "paste", resulting in a low-relief design. Sealpasteprints were given this name as, in appearance, they seem to have been made from the combined methods of both sealprints and pasteprints.

These three categories of rare printmaking techniques are discussed in greater detail in the following three chapters. There, questions are raised with regard to their production methods and uses in relation to other contemporary art media.

FOOTNOTES

CHAPTER THREE

1. A.M. Hind, An Introduction to a History of Woodcut, Vol. 1, (New York, 1963), p.20.

2. T.O. Mabbott, "Pasteprints and Sealprints," Metropolitan Museum Studies, 1932, p.66.

3. Ibid.

4. Another example, in the Universitätsbibliothek, Würzburg, shows an image of St. Barbara, also in the same brownish coloured paste and red wool.

5. Mabbott, op. cit., p.66.

6. Mabbott, op. cit., pp.64-65. A translation of the Nürnberg 'recipes':

"How to print with wool. If you wish to print with wool take clip (wool) from a cloth shearer's and boil it in woad ashes of whatever color desired. Take for each pound of wool three pounds of woad ashes and crush it thoroughly; put it into a pot and pour water over it, just enough to cover it; let it settle, and strain the water off through a cloth. Pour it into another pot, and put it on the fire again, and let it boil, and put in the wool and boil it hard, and keep stirring and when it becomes knotty, test it between your fingers, and if you can cut it with your nails it has enough; take it off, strain it, and pour cold water over it. Rinse and wring it well, put it in the sun or a warm room, and let it dry; pound it in a mortar and sift it through a pepper-sieve, and print with what falls through."

"A foundation for printing with red or brown wool. If you want to prepare a foundation for printing with red or brown wool, take one third of a pound of minium, and one ninth of a pound of burnt ocher, and two and a half ounces of mastic and of good strong varnish, which must be very strong, a bit less than a pint. Rub the ocher and minium together, dry, on a stone and put it into a glazed pot; take the two and a half ounces of mastic and put it into another glazed pot and put a spoon full or two of varnish on it and put it on the fire and let it dissolve, and then pour it into the mixture, and add the varnish and stir it well so that it becomes pappy. Then spread it on the form, not too thin, and put it on ironed starched linen, and rub it well into it. Then put it on a table and sift the wool upon it through the sieve mentioned before, so that it covers the foundation, and press it into it with your hands; then shake it and the superfluous wool will fall off. In this way it turns out well like velvet."

CHAPTER FOUR

THREE SEALPRINTS FROM THE FIFTEENTH CENTURY.

The term "sealprint" is a literal translation of the German word, Siegeldruck, given to three low-relief impressions in paper, which were thought to have been made in Germany during the fifteenth century. Two are now in New York collections, the Metropolitan Museum of Art and the New York Public Library, and the third is in the Hunterian Art Gallery in Glasgow, Scotland. In the early part of this century, the sealprints, because they are images in paper, were studied by art historians who specialized in fifteenth century prints. However, these studies never satisfactorily answered questions as to how the sealprints were made and for what purpose. They remained puzzling objects perhaps in part because of the term "print". Their subsequent incorporation with the print medium and its history led historians to believe that their production and use could be explained through the methods employed in making a two-dimensional inked image.

Research completed for this study has shown that the three so-called "sealprints" were made by three different methods of production and suited very specific, individual purposes. The Metropolitan sealprint, "The Patron Saints of Regensburg", was made from paper pulp using a method for making papier mâché described in an early sixteenth century manuscript. It was either formed in a carved stone matrix or, as I will propose, in a clay matrix cast from a metal pilgrim-badge. The sealprint may, in fact, be a paper pilgrim-badge, as it represents the shrines of three saints

which were located in a church at the abbey of St. Emmeram in Regensburg, hence the title. Its production method compares with that used to make devotional plaques and decorative appliqués out of a wide range of materials, including papier mâché. Carved matrices in stone and duplicates made in clay served as the moulds for this type of low-relief decoration.

The New York Public Library sealprint, the "Virgin Crowned by the Trinity", was made by pressing layers of paper (not paper pulp) into a matrix. It was suggested that perhaps the matrix was made from either wood or metal; however, there are specific surface characteristics in the sealprint that would suggest the use of a stone matrix for the relief. If this was the case, then a similar production method to that used to make the Metropolitan sealprint would have been used to make the matrix for this sealprint. The image was used as a devotional plaque, as indicated by an inscription impressed along the top edge of the composition.

The Hunterian sealprint, "Female Saint (St. Barbara?)", is a relief made in a single layer of paper. The very fine raised lines observed in the sealprint would indicate the use of a metal matrix. The sealprint may have been made by a panel-stamp. Panel-stamps were generally made from metal alloys and were used for embossing designs on leather bookbindings during the fifteenth and sixteenth centuries. This type of decoration, known as "blind-stamped", was made with the use of a mechanical press. There is some evidence to suggest that "proof impressions" were made in paper during the course of work on a completed design. This sealprint may have served as one of those impressions.

The methods of production and uses for the sealprints

can be substantiated through a series of discussions dealing with; first, the iconography of each sealprint; second, providing a thorough physical description of each sealprint; and third, by comparing objects of a similar nature, both in appearance and use. In this way, a more plausible, realistic explanation of the methods of production and uses for the sealprints can be attained, lending a more complete understanding of these "puzzling objects".

The Patron Saints of Regensburg
S.2863x
84:73 mm (Sheet: 90:78 mm)
Regensburg, ca. 1500
The Metropolitan Museum of Art, New York

The Metropolitan sealprint is attached to the blank verso of a page from a fifteenth century Netherlandish block-book of the Apocalypse (Fig. 103).(1) This page was one of a group of block-book leaves found with woodcut prints pasted on their verso sides.(2) It is a portion (12 leaves) of the second edition of the block-book, originally consisting of 48 pages and was found in a sixteenth century binding.(3) The block-book leaves were bound in with old paper which formed frames to the leaves and several pages were left blank for additional matter, presumably to be added by hand. "The Block-book leaves (before inlaying in present volume) had served as an album or scrap-book from an early period, as may be judged by the additional pieces pasted on the backs."(4) The block-book leaves were first found in London, in the mid-nineteenth century, by a book antiquarian. They then came into the collection of C. Fairfax Murray and, in 1917, two of the leaves were purchased by Pierpont Morgan for the Morgan Library in New York. They are now held in the Metropolitan Museum of Art Print Room.

The composition depicts the images of three saints with their corresponding attributes. They are standing within an elaborately designed architectural framework of Gothic arches terminating in "ornamental crosses".(5) Dr. T.O. Mabbott suggested that the structure represented a shrine and, as will be shown later, there may be a good reason for suspecting

this.(6) The saints are standing on a floor covered in a diamond pattern, possibly a tiled pavement, and below this the names of the saints are written along the lower edge of the composition. The inscription reads: "S(anctus) + dionisi(us) + S(anctus) + emeram(us) + S(anctus) + holfga(n)g".(7)

All three saints are depicted wearing the robe and mitre of a bishop and each carries a crozier. Each of the figures is shown with a simple, unadorned, circular nimbus. St. Denis holds a severed head in his right hand and faces slightly inward towards the central figure of St. Emmeram. He is shown holding a ladder with eight rungs in his right hand and is positioned in a direct, frontal pose. St. Wolfgang leans to his left and holds the model of a church, or shrine, in his right hand, while resting an ax on his left shoulder. The model is shown with two round towers with pointed spires ending in crosses. Two windows can be seen in the main structure to the left and one in each steeple.

St. Wolfgang, the patron saint of Regensburg, was depicted in a woodcut print, as we have already seen, by the Regensburg printmaker "Casper" (Fig. 57). In that composition, he holds the model of a church (not similar to that seen in the sealprint) and an ax, and is also dressed as a bishop. The ex votoes, displayed in the woodcut print, indicated a shrine site where pilgrims would make offerings. St. Wolfgang was a popular cult figure in Southern Germany during the late Middle Ages.(8) He was an enthusiastic reformer of the monastic system in Bavaria and a loyal supporter of the Emperors, Otto II and Otto III. The church model refers, no doubt, to his activities in church reform. He was buried in the church at St. Emmeram and canonized by Leo IX in 1052.

St. Denis is known as the first bishop of Paris. He was

beheaded, according to legend, on Montmartre (mountain of martyrs) in Paris and carried his head to a village north-east of Paris where his cult began. (9) He became known as the patron saint of France and certain Benedictine abbeys kept the translation feast of St. Denis (21-22 April). A shrine devoted to him was located in the abbey church at St. Emmeram.

According to an account by Bishop Arbeo of Freising (d.772), St. Emmeram was originally the bishop of Poitiers (although his name appears on no list) before coming to Bavaria.(10) He was detained by Duke Theodo at Regensburg and was eventually murdered by members of the duke's household. He was bound to a ladder and mutilated, and hence the symbolism of the ladder in the sealprint composition. He became the patron saint of St. Emmeram, a Benedictine abbey, where he was buried and honoured as a martyr.

In the sealprint, the figures have been carefully organized within the composition using a naturalistic proportioning in the bodies and a convincing treatment of the folds of material in the robes. These stylistic features would indicate a knowledge of Renaissance figural representation. The print has been dated at about 1460 in comparison with the woodcut prints found pasted on the group of block-book leaves. It was thought that the sealprint was contemporary with these prints.(11) This is not conclusive evidence, though, and it must be taken into account that the fragment of a sixteenth century etching was also found in the group of block-book leaves.(12) According to a stylistic analysis, the sealprint would more likely be dated around 1500, or possibly later. This will become perhaps more obvious in the discussion of the sealprint's

relationship to contemporary pilgrim-badges, which also indicate a post-1500 production date.

Additional visual "clues" in the sealprint composition provide further information as to the representations intended and the meaning of this specific group of figures and symbols. On the left of the scene is the Crossed-Keys emblem and, at the lower right corner, a Key and Palm Branch. Traditionally, a silver key on a red field and a red palm branch on a silver field represented the abbey of St. Emmeram in Regensburg.(13) This emblem is shown in a miniature from a Missale written in 1406 at the abbey of St. Emmeram (Fig. 104). This scene has obvious compositional similarities with that of the sealprint. The three saints are shown seated beneath a simple, wooden framework each holding their personal attributes. The emblem of the Key and Palm Branch is placed beneath the figure of St. Emmeram in the centre of the page.

Both emblems are again seen in a fifteenth century engraving by the Master of St. Denis (Fig. 105).(14) Two small figures, placed within the elaborate architectural canopy above the three saints, hold shields depicting the Crossed-Keys and the Key and Palm Branch. The representation of Sts. Wolfgang, Emmeram, and Denis, and the characteristic shrine-like setting, are very similar to the sealprint composition.

It has been suggested, and generally accepted, that the Crossed-Keys, in this instance, represent the city of Regensburg.(15) But there may be either a totally different meaning for this emblem, or else one that was intended to be combined with the "Regensburg arms" meaning. In a pilgrim-badge, made in Magdeburg around 1450, the Crossed-Keys emblem

is shown beneath the figure of Pope Boniface IX (Fig. 106). Also, as it has been pointed out in Chapter Two, the engravings made for the 1466 festival at Einsiedeln had the Crossed-Keys and Papal Tiara symbols. The combined representation of these two symbols represented a papal bull which was issued to the abbey granting full indulgence to pilgrims visiting Einsiedeln during the festival period.(16)

> "The keys themselves are symbols of the power of the Church and the Church Fathers mention them particularly as referring to the power of the Church to grant remission of sins."(17)

This quote would indicate that the Keys alone refer to official Church recognition. The keys of St. Peter defined his role as the administrator of Church authority. Thus, if the Church in Rome authorized a religious event, or site, such as, a pilgrimage or specific shrine, the presence of St. Peter's Keys would visually represent this authorization. The "power of the keys" also played a role of authority and official power of the Church in the complex system of issuing indulgences. The exercise of the "power of the keys" meant that the debt of punishment was definitely remitted.(18) It does not seem plausible that the Crossed-Keys symbol in the Magdeburg badge represents the arms of Regensburg. However, it is likely that in both cases, the sealprint and the pilgrim-badge, the Crossed-Keys emblem refers to the Church recognition of the shrine sites represented by both objects.

Why would Church authority be required, with regard to a religious event or site, at the abbey of St. Emmeram? The croziers, mitres, and robes, along with the bodily relics

of Sts. Emmeram and Wolfgang, were held in the abbey church.(19) Pilgrimages to the tomb of St. Emmeram began as early as 685, and the shrine was well established as a major pilgrimage site in Southern Germany by 768.(20) The cult of St. Wolfgang and pilgrimages to his tomb at St. Emmeram's began before the official consecration of the tomb by Pope Leo IX on October 7, 1052.(21) Miracles had occurred there before this and it was already a scene for devotional offerings made by visiting pilgrims. But after the pope's recognition of the shrine, the cult took on a greater religious fervour, and worship to St. Wolfgang soon overshadowed the older cult of St. Emmeram. In the mid-fourteenth century, a metal latice was erected over the shrine area of St. Wolfgang's tomb, not as protection for the tomb from visiting pilgrims, but as a framework on which to hang numerous ex voto objects left by the faithful in the shrine area.(22)

In the church crypt, where St. Wolfgang's tomb was located, were the bodily relics of St. Denis. These were given to the church by Kaiser Arnulf, a high abbot from Regensburg.(23) The choir above the crypt dedicated to St. Wolfgang was, in turn, dedicated to St. Denis in the eleventh century, and his popularity as a cult figure grew from that time. Monuments to all three saints (Denis, Emmeram, and Wolfgang) were to be found in the church at St. Emmeram.(24) In about 1440, Abbot Wolfhard Strauss from St. Emmeram's (1423-1454) gave the church an expensive reliquary which had along one side of it, the busts of Sts. Emmeram, Wolfgang, and Denis.(25) Regensburg was famous, not only for pilgrimages to the abbey of St. Emmeram, but also pilgrimages to the "Schönen Maria", a devotional image of the Virgin held

in the Alte Kapelle in Regensburg and also to the Niedermünster which held the tomb and relics of St. Erhard.(26)

There is certainly enough information in the sealprint composition and supporting historical evidence to suggest that this object documents the shrines of Sts. Denis, Emmeram, and Wolfgang in the church at St. Emmeram. The abbey emblem confirms this, along with the Crossed-Keys emblem, which may very likely represent official Church recognition of the shrines as a pilgrimage site. The Gothic framework surrounding the figures in the sealprint composition may even represent one of these shrines in the church. The highly organized composition, with its naturalistically proportioned figures, the cohesive positioning of them within the architectural format, and the specific emblems are indications that the sealprint was a deliberate piece of religious art, made by a skillful craftsman who intended to convey a complex meaning, derived from both fact and symbolism.

Description of the sealprint surface.

In considering how the sealprint was made, we must first look closely at the surface of the paper, noticing the type of paper used, whether it is coloured or not, and also take into account both the front and back sides of the print.

The paper surface, in general, is smooth and does not show the usual paper characteristics of "laid" and "chain" lines. There is also no visible watermark. A normal sheet of paper would also have fine hair-like impressions across the surface from being pressed between layers of felt when it was made (See: Appendix A). There is no sign of layered sheets of paper, as in the New York Public Library sealprint,

in fact, only one rather thick layer can be seen. The sealprint is torn at each corner and there are no layers of paper visible at these points. In one section, on the lower right corner, one can see the paper fibres which, under 10x magnification, appear to be long, white, and "silky", with a slight sheen to each strand. One can also see fine hairs protruding across the surface. The appearance of these "long, silky fibres" raises the question as to what type of raw material was used to make the relief. The paper surface does not indicate the use of a normal sheet of paper and the exact material cannot be determined without chemical analysis.

The sealprint verso cannot actually be examined, as the print is still laid down on the block-book page. But one can see the depression of the sealprint verso from looking at the front of the block-book page. This is especially apparent in the area along the inscription between the two shields; in other words, if the page was not attached, one would see a concave surface on the verso of the sealprint.

The sealprint surface is colourless overall, except for a very small amount of light green pigment in some areas. This may have occurred from the coloured page of the following block-book leaf pressing against the sealprint surface. Also, there are some small deposits of black pigment (splashes of ink?) sprinkled across the sealprint surface, which cannot be explained. Some in the top right section are blurred.

Method of production and workshop origin.

From the description of the paper surface and given the impressed verso of the sealprint, it is likely that the relief was made from some type of pulp, perhaps paper, pressed

into a matrix. A method of production using paper pulp pressed into a metal matrix is described in the so-called "Recipe Book" from the abbey of St. Katherine in Nürnberg, dated 1510:

> "To make reliefs with paper: You can make reliefs from paper, as if cut from wood or wax or any material. Take two to three sheets of paper, depending on how much you need to make, and cut them into small pieces, place this into a clean pot and cover with cold water. Sit the pot on the fire and leave it for two hours. When it has cooked down,' put it in a mortar and grind the mixture until it is smooth. Then take a matrix made from copper, or lead, and put a thin layer into it, pressing it into the form. When the relief is as thick as you want, take a warm cloth and press it onto the back of the relief. This takes out some of the dampness. Take four or five other pieces of cloth and lie them on the form with a last layer of felt and place the whole thing under a press for a quarter of an hour. After this, take it out from under the press and sit it on top of a warmed stone for a while. Then knock the form gently and the relief should fall out. In this manner, one can obtain a good, sharp image."(27)

Small papier mâché motifs in the shape of rosettes are known to have been made as early as the thirteenth century in Gent.(28) A similar method of papier mâché production was used as a cheap substitute for fired clay and this technique was conveyed to the North from Italy in the fourteenth century.(29) By the fifteenth century, the availability of paper popularized this medium, which was used to produce inexpensive devotional images in large numbers (See: Appendix A). They were then sold to pilgrims. A large store of papier mâché plaques and reliefs was discovered underneath the choir in the abbey church at Wienhausen (northeast of Hannover).(30) The following three examples are taken from the Wienhausen collection.

The first depicts Christ as the Man of Sorrows with the Virgin and St. John (Fig. 107). It was made at Wienhausen

and dates from the mid-fifteenth century.(31) The plaque is round (11 cm in diameter), made from papier mâché, and has been painted in brown, red, green, and black. There is a hole in the centre of the plaque at the top with a string looped through it for hanging. A second round papier mâché plaque made at Wienhausen portrays Christ as the Man of Sorrows with Symbols of the Passion (Fig. 108). It, too, is painted in the same colours as those listed above. A third example depicts The Resurrection (Fig. 109). The central round composition is made from papier mâché (12 cm in diameter) and has attached to it cut out borders in paper measuring 16,7 x 16,5 cm. The composition is coloured in red and blue paint on a white ground. It was probably made in Lüneburg and dates from the first quarter of the fifteenth century, making it the oldest known example of a papier mâché relief image.(33).

The nuns from the abbey at Wienhausen had apparently been occupied in producing numerous objects and images to be sold to visiting pilgrims. Cost and portability, no doubt, made these objects popular with the travelling pilgrims. They collected them at shrine sites and took them home to be hung on the wall as devotional images, or else kept them as religious talismans and amulets (See: Chapter Two).(34) The use of papier mâché offered a substitution for, not only clay works, but time-consuming hand-carved decoration in wood and metal.

The Metropolitan sealprint has similar physical characteristics seen in the paper relief The Resurrection; that is, both of these images have relatively fine lines rendered in papier mâché. It is very likely that the Wienhausen relief was made from a clay matrix. This suggestion is sup-

ported in the following section, which discusses stone and clay matrices and their use in making low-relief decoration.

The sealprint is probably made of the same paper pulp mixture described in the Nürnberg manuscript, or one very similar; however, it need not have been formed strictly in a metal matrix, as cited in that 'recipe'. Looking once again at the surface of the sealprint, one sees incised flaws in the grill work and columns surrounding the figures. These flaws, which look like dents in the surface, would not have been made after the sealprint's production but are more than likely characteristics of the matrix used to form the relief. Let us suppose that the matrix was made from clay and that an object was used to cast the clay form. Any surface characteristics in that original object would have been replicated in the clay mould, and these characteristics would appear in the relief image taken from the clay mould, which duplicated the surface of the original object.

I should like to suggest, that the matrix was a clay cast made from a metal pilgrim-badge. This is supported by two specific elements in the sealprint design, the two rings placed between the outer pointed spires, which do not have any decorative function in the grill work pattern; however, they do resemble the rings found on the edges of metal pilgrim-badges. These were used to sew the badge onto a scrip, or hat, and the badges were worn as amulets by pilgrims for protection on their journeys. Because of this observation, the sealprint must be a pilgrim-badge depicting the three saints whose relics were located in the abbey of St. Emmeram.

Comparisons with known metal pilgrim-badges strengthens the main core of this argument; that is, that the sealprint had its origin in a workshop producing pilgrim-badges for

the abbey of St. Emmeram. Looking once again at the pilgrim-badge from Magdeburg (ca. 1450), one sees a similar depiction of three holy figures (Fig. 106). St. Maurice, St. Peter, and Pope Boniface IX are each shown holding their personal attributes and standing beneath arches which form a church-like, or shrine, structure topped with Greek crosses. The Face of God, or Christ, is shown above the central figure of St. Peter and below the three are heraldic shields, one of which, as noted, depicts the Crossed-Keys. Four squared-off appendages stand out to each side of the badge, with two smaller rounded loops at either corner supporting small crosses.

Another pilgrim-badge made for the abbey of St. Emmeram dates from around 1500 (Fig. 110). This badge was made from a matrix similar to that shown in Figure 111. The three saints: Denis, Emmeram, and Wolfgang, are again represented within a church-like architectural frame. The Crossed-Keys emblem is shown on the two corner shields, with the Key and Palm Branch, representing the abbey, depicted on the central shield. The saints' names are impressed in the borders of the badge and the loops to either side are, in this case, especially prominent. Both the sealprint and the two metal pilgrim-badges display, what might be considered, a conventionalized grouping of compositional elements: each object portrays three holy figures within an architectural scheme with the symbolic emblems displayed on shields (all three having the Crossed-Keys) and each has the attached loops.

Dr. Kurt Köster recognized the relationship between the loops in the sealprint composition and those found on metal pilgrim-badges.(35) However, he suggested that a pilgrim-

badge of the sealprint composition was cut into stone and that this matrix was used as the mould for the sealprint in papier mâché.(36) Metal badges were traditionally carved in stone and cast from the incised stone matrix, such as that shown in Figure 111. In making a cast metal badge, a hollow channel, known as a "gate", was necessary, in order to pour the molten metal into the matrix. Dr. Köster believes that because the sealprint relief does not show signs of a "gate", which would have left a fairly wide area raised above the surface, the print was probably made as a "proof impression", the result of a craftsman trying out the stone matrix to see how the finished metal badge would appear in relief.(37) He concluded that, in this rare instance, the "working impression" (the sealprint), which would not normally have been kept, was retrieved and pasted into the collection of block-book leaves.(38)

However, the flaws noted in the sealprint relief surface suggest another method of production. An alternative suggestion, based on these flaws and the lack of a "gate" in the relief, would be that a metal pilgrim-badge was used to make a clay matrix, which was, in turn, used to make the papier mâché relief (the sealprint). It was a common practise in the fifteenth century to produce matrices in clay which were used with, among other materials, papier mâché. This area of production is discussed in more detail in the following section of this chapter.

The Metropolitan sealprint has definite iconographical links with the abbey of St. Emmeram in Regensburg. There can be no doubt that, as an object, it is associated with metal pilgrim-badges made for the abbey. Compared within the context of the two metal badges from Magdeburg and Wien-

hausen (ca. 1450 and ca. 1500), it would seem that the attributed date of ca. 1460 given to the sealprint is too early. The two metal badges do not show the technical capability and the artistic understanding of form and composition displayed in the sealprint. They are much simpler in execution and organization, whereas the sealprint displays a more sophisticated use of the shields and inscription, along with a more graceful, naturalistic delineation of the figures. In the light of this comparison, a more likely date for the sealprint would be around 1500-1520.

One very important question remains to be asked: Was the sealprint a one-off impression, or were numerous paper pilgrim-badges made and this is the sole survivor?

It is not inconceivable that pilgrim-badges were made in papier mâché and produced in large numbers. Papier mâché was a popular material used in the production of pilgrimage souvenirs, as shown by the large Wienhausen collection. My suggestion, with regard to the method of production, is that instead of an incised stone matrix, an actual metal pilgrim-badge was used to make a clay matrix for the sealprint. This would explain the absence of a "gate" in the sealprint relief and the appearance of flaws, or dents, on the sealprint surface. An additional inference, suggested by the missing "gate", is that the matrix was intended for impressions made from papier mâché and not metal. Thousands of devotional items were made and sold at pilgrimage sites and very few of them exist today.(39) Those which do exist, do so as a result of fortuitous circumstances which protected them from the ravages of daily use and the destructive effects of weather and insects. Therefore, the uniqueness of this sealprint, or paper pilgrim-badge, should not

discount the possibility that numerous objects like it were once produced and distributed on a large scale.

One final observation, with regard to the use of the sealprint as a pilgrim-badge, concerns its unusual location. Why paste a colourless paper relief on a very beautiful and, no doubt valuable (even in the fifteenth or sixteenth century) block-book page? Normally, religious images in low-relief papier mâché were hung on the wall and displayed for devotional use. A "proof impression" made by a craftsman during the course of his work had little chance of being retrieved from the rest of a workshop's daily refuse; on the other hand, a pilgrim-badge or religious souvenir obtained from a visit to the site of holy relics, would have been carefully placed in the most valuable and protective setting available, i.e., a collection of block-book leaves, where it remains today.

Stone and clay matrices used to make reliefs in papier mâché and clay.

The die-cutters and goldsmiths who made metal pilgrim-badges first carved their designs in a soft stone, such as, soapstone or slate, and used the incised stone matrix for casting the metal badge.(40) Another area of fifteenth century art production utilized matrices, made from stone and clay, to make relief decoration out of a variety of materials.(41) The same craftsmen made these matrices. Die-cutters were accustomed to making such incised images for: seals, coins, and medals. Examples showing exceptionally fine designs were made by goldsmiths who were trained to cut detailed compositions in metal. The production began with

making an original hollow image in stone. A clay cast was taken in relief from this original and fired. Additional duplicate matrices could then be made in clay from these sturdy reliefs, allowing for numerous replicas of the valuable original form hand-carved in stone. Most of the fifteenth century matrices are either round, rectangular, or lozenge-shaped. The smaller matrices (approximately 5-8 cm) were used to make decorations out of marzipan, which garnished large cakes and tortes. The larger matrices (about 6-17 cm), which tend to portray more elaborate compositions, were used to make relief decoration out of materials, such as: papier mâché, wax, bronze, and clay. These reliefs were applied to small wooden boxes, candles, bells, kettles and mortars, and pottery. Small devotional plaques, of the type found at Wienhausen, were also made from these larger matrices. The most common use for the matrices, which is still prevalent in Germany today, was to decorate festive cakes, known as Springerle, with scenes from the Life of Christ and the Virgin.

The result of this area of production in fifteenth century art is a group of stone and clay matrices which originated almost exclusively in the Middle Rhine region, between Mainz and Cologne. This region had a ready supply of the fine clay necessary for the production of matrices and duplicate originals.(42) Perhaps the most influential aspect of this region, on the production of matrices, was the custom of making decorated breads and cakes for religious holidays. This was usually the function of the nuns in an abbey. Stone matrices, known as Kuchelstein, and clay matrices were used to make relief decoration on pastry. An elaborate recipe for making Springerle, a sweet paste consisting of egg-whites,

sugar, and refined flour, resulted in a dough which, when baked, retained the intricate relief compositions impressed from the matrices (Figs. 112 and 113).(43) These festive cakes are given to members of the abbey and its benefactors and friends on religious holidays. In the Cistercian abbey at Lichtenthal, in each week between Christmas and Easter, one hundred large and three hundred small Springerle are made, baked, and distributed as holiday gifts.(44) Many of the themes are the same as those depicted in the fifteenth century. At Christmas, themes such as, "The Annunciation", "Presentation to the Temple", and the "Nativity", are portrayed. The "Christ Child with Symbols of the Passion" and the "Adoration of the Three Kings" are given as New Year's greetings, in the same manner as woodcut prints and engravings with printed salutations (See: Chapter One). Themes common during the Easter season are the "Last Supper" and "Christ on the Mount of Olives".

Other matrices depict secular themes and it is unlikely that they were used for decoration in marzipan or on festive cakes. Themes such as: allegories, mythical beasts, and emblematic shields, were portrayed on the items previously listed: boxes, kettles, bells, and clay jugs. Scenes of lovers and themes concerning marriage were often given as gifts between a bride and groom, or as wedding presents.(45) The reliefs taken from stone and clay matrices were certainly adapted to many uses and materials.

A selection of round stone and clay matrices from the group described above is given in the following discussion. They were used to make plaques and decorative reliefs out of papier mâché and clay. This area of research expands somewhat on the production method used to make the Metropolitan

sealprint, with the emphasis placed on clay matrices used to form papier mâché reliefs. It also provides a basis for explaining the procedure followed in making the New York Public Library sealprint. That image was made from a matrix almost twice the size of the Metropolitan sealprint; however, it is possible that it too was a stone or clay matrix. In addition to this, all of the clay matrices in this discussion have corresponding fifteenth century engravings. The section which follows deals specifically with the influence of prints by the Master E.S. seen in two fifteenth century clay matrices.

An example of an original stone matrix is in the Kunstgewerbemuseum, Cologne (Fig. 114). The composition represents St. Eustace (or possibly St. Hubert) shown kneeling before an apparition of Christ Crucified (seen between the stag's antlers). Because of the round shape of the matrix, there is a somewhat distorted arrangement of the animals on the right. They appear to run up into space and crowd that side of the composition. The landscape is described by using small hillocks topped with a flower motif: three small dots on short stems. In the background, one can see a castle surrounded by a wall and a distant windmill on the farthest hill top. The hollow carving was made in soapstone, which is soft enough to carve by hand and achieve a large amount of fine, surface detail. The matrix is 10 cm in diameter (2,5 cm thick) and has a date of "1451" carved into one side. There are seven additional examples of round, soapstone matrices held in other German collections.(46) There is little doubt, that this stone matrix is the kind which would have been duplicated in clay, first as a relief image and then in additional incised matrices.

Several examples of clay matrices from the group made in the late fifteenth century along the Middle Rhine region of Germany, are in the Mittelrheinisches Landesmuseum, Mainz. One of these, The Judgement of Paris, has both compositional and stylistic similarities with the Cologne stone matrix (Fig. 115).(47) It also provides an example of how the matrices were used. But first, in looking at the composition we see once again the familiar floral motif shown in the St. Eustace landscape.(48) The same essence of a crowded composition, expressed as a result of a large amount of surface detail having been compressed into a circular format, exists in this matrix composition also. However, the main figures lack the distortion shown in the stone matrix. Specific features vary from the Cologne matrix, such as, the border motif which, in relief, imitates the stem of a young tree (showing small buds along its sides), or a thorn bush stem. Perhaps more noticeable than this is the appearance of flying banderoles with inscriptions, curling and twisting around the four standing figures. The inscriptions are all in reverse, as they would have appeared in the original stone matrix.(49) This is further indication that the images were intended to be seen in relief, which would have reversed the direction seen in the hollow matrix.

Fortunately, a relief impression from this matrix exists in the Germanisches Nationalmuseum, Nürnberg (Fig. 116).(50) The relationship between the relief and the Mainz matrix has not previously been recognised. The low-relief composition was made from papier mâché and is shown as a decorative relief on the lid of a box made in the late fifteenth century (Fig. 117). The diameter of the outer edge of the relief is, 13,8 - 14 cm, and the corresponding measurement in the clay

matrix is 14,4 cm. The difference of 6 mm between the two measurements can be attributed to the shrinkage of the paper relief when drying. The box is made from strips of thin wood formed by hand and then covered in layers of paper and cloth. The relief was formed in the clay matrix and applied (probably while damp) to the surface of the box lid. The whole box was then painted in a floral motif with the "Judgement" scene depicted in naturalistic, life-like colours. One can see much more clearly in the relief that along with the banderoles there are inscriptions above each of the standing figures. They are representations of Mercury, Venus, Juno, and Pallas. The reclining figure to the left is Paris, represented here as a young knight. His name is inscribed on the lower ledge of the fountain base. The setting is a medieval, garden-like landscape. Behind, in the distance, is a castle with several towers.

The composition is very similar to that of a fifteenth century engraving by the Master of the Banderoles (Fig. 118).(51) In both compositions, Mercury is shown in the medieval costume of a learned doctor who is nudging Paris with his staff in order to waken him from his sleep. The figures of Paris are shown in similar costumes, that is, both are in a knight's armour with breast plate, pleated skirt, and long, narrow, pointed boots. Both figures are also shown lying down with their head resting on one arm. The three goddesses are placed in the same order. The first is unclothed except for her headdress (a turban in the papier mâché relief and a crown in the engraving) and a necklace. She displays the beauty of her form in a direct, frontal pose. The second goddess turns, giving a three-quarter view of herself, and the third, holding thin

veils of cloth in one hand is shown just walking onto the scene. According to the legend, each goddess insisted that she was the most beautiful and tried to pursuade the young sheperd, Paris, by making both offers of kingdoms and power, and by parading before him in order that he might see for himself which was the most perfect in form. Paris chose Venus who had offered him the hand of Helen (of Troy); hence, we see here the scene which sparked off the Trojan War and are able to understand the depiction of young Paris as a knight in armour.

The engraving is after a composition by the fifteenth century Florentine engraver, Baccio Baldini. This is supported by the appearance of Italianate features in the composition; the cypress trees and architecture (domes and towers), along with the unusual shapes of the trees, "spear-like" and like "small mushrooms".(52) However, Northern influence is seen in the plant-type shown between the figures of Pallas and Juno and in the helmet with five ostrich feathers, which are motifs found in the work of the Master of the Playing-Cards. The portability and exchange of printed compositions in the fifteenth century led to designs such as this which display both Northern and Southern stylistic and decorative traits.

Not only were clay matrices used for making relief appliqués out of papier mâché but also reliefs of a similar nature in clay. An example of a clay relief appliqué is attached to the side of a pilgrim-flask in the Kunstgewerbemuseum, Cologne (Fig. 119). The flask is made from stoneware with a salt glaze and is 20 cm in height. The appliqué is approximately 8-9 cm in diameter. It was made in Cologne and dates from the second half of the fifteenth century.(53) This type

of relief appliqué decoration in clay is found on several pieces of stoneware pottery made in the sixteenth century.(54) A clay matrix depicting The Crucifixion (Fig. 120), was used to make the relief decoration seen on a clay pot from the second half of the sixteenth century in Figure 121. The pilgrim-flask body stands on three small "feet" and has attached to the neck, two extensions with holes which enabled the owner to carry the flask on a cord or leather strap. The relief appliqué, which appears on one side of the flask, depicts St. George Killing the Dragon. It is virtually an exact copy of an engraving by the fifteenth century printmaker, the Master E.S. (Fig. 122).(55) Minor details in the landscape (trees and plants) precluded reproduction in the clay medium, but the main elements in the print composition; St. George, the dragon, the horse, the maiden, and the castle in the background, have all been neatly arranged within the circular format imposed by the round flask body. They are represented in the same order as seen in the print, which indicates that the composition must have been reversed when carved in the original matrix.

It has been pointed out, that this group of fifteenth century stone and clay matrices from the Middle Rhine region repeatedly demonstrate the influence of fifteenth century prints in their compositions.(56) The importance of this observation to a study concerned with the functions of printed images in the fifteenth century should be obvious. Therefore, the next section proceeds further with the relationship, specifically, between the prints made by the Master E.S. and two additional clay matrices.

The influence of the Master E.S. in two fifteenth century clay matrices.

The printmaker, Master E.S., is known to have worked in the area of Southern Germany along the Swiss border in the region of Constance, between ca. 1450 and 1467. Out of a known 314 engravings, 50 exist in only two impressions and 95 are unique. It has been suggested that his original oeuvre may have consisted of as many as 500 prints.(57) Eighteen of the prints are signed with the letters "E.S." and at least eight others have either an "E", "e", or "S" printed on them as single letter monograms.

The Master E.S. made his prints during a time when goldsmiths were the main printmakers, having discovered through their own craft, the use of making prints on paper as patterns and records of ornamental designs. It is only natural to assume that the Master E.S. was trained as a goldsmith due to his tendency towards decorative flat surfaces and the use, at times, of small metal punches in some of the compositional details. He also produced a number of small engravings that appear to have been intended for goldsmith's work.(58) The Master E.S. was born around 1435 and died in either 1467 or 1468.(59) His prints fall into three phases: early, ca. 1450; middle, 1450-60; and late, 1460-1467/68. Out of the 314 impressions, 130 have been attributed to the early and middle phases and 184 to the later phase.(60)

The themes that Master E.S. dealt with varied. Among them are scenes from the Life of Christ, the Life and Death of Mary, the saints, and numerous profane subjects. His style was influenced by various south German and Swiss mas-

ters from 1445, for instance, the school of Konrad Witz, the Master of the Karlsruhe Passion, and Basle Masters.(61) He also assimilated Netherlandish stylistic traits from observing the sculpture of the late Gothic artist, Nicolaus Gerhaerts van Leyden, with his ability to create fuller more expressive figures in a harmonious composition. Many of the Master E.S. prints were, from appearance, modelled after sculpture, or were perhaps intended as models for sculpture.(62) These compositions generally depict single figures without background details and unnecessary ornament, positioned in a clear, monumental pose very often having a more three-dimensional appearance (Fig. 123). His print compositions influenced later fifteenth century sculptors, such as, Erasmus Grasser, Veit Stoss, and Tilman Riemenschneider.(63)

As Allen Shestack has pointed out, during the fifteenth century, "once a particularly successful motif was introduced, it became the property of all and there was no stigma attached to the imitation of one artist or another".(64) The printing medium is intrinsically suited to producing numerous images which are exact and because they were light-weight and portable, the prints 'travelled' and were distributed over a large geographical area. They were commonly used as guides for craftsmen, having replaced earlier means of transmitting designs, such as, sketchbooks and manuscript illuminations. Engravings, more than woodcut prints, had the added visual characteristic of looking like pen and ink drawings and this, along with their fewer numbers in terms of production, increased the value of their ownership.

The influence of Master E.S. prints in the compositions of small art objects from the late fifteenth century, such

as, mother-of-pearl carvings (Figs. 124 and 125) and stained glass roundels (Figs. 126 and 127), is well known.(65) Two clay matrices also have corresponding Master E.S. prints. The first example was discovered on the site of what was once a chapel in East Lothian, Scotland. It is known as the, "Markle Plaque". The clay matrix is 15,4 cm in diameter with the central composition measuring about 13,7 cm (Fig. 128). A relief cast of the matrix in resin shows the composition as it was intended to be viewed (Fig. 129). This matrix is exceptional, in that it is the only example with a border inscription combined with the central composition. It is also unusual because the inscription is in French. None of the Middle Rhenish stone and clay matrices known, to date, have border inscriptions. The only lettering which appears on those examples is found within the central compositions and, in most cases, the inscriptions have been placed on banderoles. They are all in various German dialects and none are in French.

Between two decorative bands created by a twisted cord and chain pattern, the inscription has been made in Lombardic capitals and reads:

MON * C_ER * AVERDMON * CUER * AVE * GARDE_ *

The missing letter (U?) in "C_ER" appears to have been an oversight on the part of the craftsman as there is no indication that a letter was made in this area. The "RD", in "AVERDMON", is difficult to interpret as there are no litany supplications to the Virgin with a formula using those initials and a complete translation is impossible due to the missing section on the lower edge. However, since the in-

scription is in French, the "RD" could be an abbreviation of Reine De (Queen Of). The letters "RD" might also come from a papal bull of 1371, Infallibilis Causa, in which is found the exhortation, "O Reparatrix Dispensatrix, ora pro nobis" ("Oh Restorer and Dispenser, pray for us").(66) Thus, the inscription could be translated as, "My Heart, Hail to the Queen of My Heart, Hail Guard..", which is an appeal to the Virgin (the "Queen of Heaven") in her capacity to provide divine protection on behalf of the petitioner. The quote from the papal bull correlates, if not by explaining the "RD" symbolism, by yielding additional meaning to the inscription as an invocation calling upon the Virgin as a restorer of faith and dispenser of grace (See: Chapter Two).

The central area of the matrix depicts a scene of the "Virgin and Infant Christ Seated in a Garden". The baby is held in the arms of His mother and a scroll (with no inscription) ripples outward from His waist. The Virgin's hair is loose and wavy, flowing into the folds of her dress. These have been carefully arranged to create a rhythmical series of lines within the circular format of the composition. The heads of the two figures are placed in the centre of the composition and act as a focal point, unhampered by the landscape details; sprigs of grass, flowers, plants, and two birds. In the background is a low stone wall of three sections, the middle section has a tapestry placed over it. The scenery beyond the garden wall is a mountainous landscape with a castle roughly depicted by three towers on a hill.

A corresponding composition is found in an engraving by the Master E.S., The Madonna with the Playing Christ Child Seated in a Garden (Fig. 130).(67) In the print, the Virgin reads a book held in her right hand, while the Child

balances somewhat precariously to the left, holding a pinwheel and supported by her left hand. Except for the depiction of Christ as a child, in the print, and as a baby, in the matrix, other details in the landscape, the trees and small plants, vary only in the amount represented. The bird, seen perched on the right section of the wall in the print, is the same type as those two depicted in the foreground of the matrix composition. The major narrative elements; the two figures, the wall in three sections with a tapestry, the mountains, and the castle, are shown in both compositions.

The differences between the two compositions are perhaps not so much a matter of descriptive details but are changes resulting from the interpretation by one artist of another's composition. These changes were also dependent upon the round and rectangular formats imposed in each instance and, no doubt, by the specific art medium used. The "Markle Plaque" design displays a closer, more cohesive sense of unity between the two main figures in smoothly flowing, sculptured lines. The baby is shown placed next to the Virgin's torso and this positioning leads the eye of the observer to this area of intimate interaction between the faces of the mother and child. The folds of drapery from the Virgin's robes have been pushed up beneath the two central shapes creating a solid visual foundation, which contributes to the sense of compactness in this figural arrangement. The print, however, as a two-dimensional object portrays a sharper, linear image. The composition depicts a looser grouping of the two figures, due in part to the awkward placement of the Christ Child away from the figure of the Virgin towards the left edge of the composition. The drapery spreads outward and down to the right, creating a sense of movement, again,

away from the central images in the scene.

The changes in the two compositions are not a question of individual artistic ability on the part of each artist. What does seem apparent in the comparison between the matrix composition and the engraved one, is that the variations in each scene correspond with the round and rectangular formats of each object, i.e., the clay matrix and the engraved print. The artist who made the matrix created a more unified composition imposed by the shape of the matrix. While the engraver, working on a rectangular metal plate, may have felt less inclined to increase the compactness of the arrangement and produced a composition which made use of the total surface area within that prescribed format. The lack of surface area available in the clay matrix, imposed by its round shape, had just the opposite effect; a tightly composed group of two figures and limited additional descriptive detail.

The religious nature of the "Markle Plaque" border inscription suggests that the matrix was used to make devotional plaques. As we have seen, this type of clay matrix was especially suited to making decorative relief appliqués in clay (Figs. 119 and 121). But we have also seen reliefs of a devotional type in papier mâché, such as those made at Wienhausen. Looking once again at the Resurrection paper relief (Fig. 109), one can imagine that a clay matrix such as that shown in Figure 120, might have produced this type of relief in papier mâché. The "Markle Plaque" could also have been used to make relief images in paper. Experiments using layers of paper dampened in a starch paste and pressed by hand into the matrix have shown that an acceptable relief image in paper is possible from the "Markle Plaque" (See:

Appendix B).

A closer comparison in the form of a devotional plaque made from papier mâché, is The Holy Face in Profile, which measures 9,8 cm in diameter and has a border inscription encircling the round format of the object (Fig. 131). It was probably made in Lüneburg around 1500.(68) The motif is a type found in numerous Italian medals, panel paintings, and woodcut prints.(69) It is not a sharp impression and sections from the right edge are missing, however, the inscription impressed around the inside border of the composition can still be read: (IE-)SVS + XPS + SALVA/T(O)R + MV(N)DI ("Jesus Christ Saviour (of the) World"). The head was painted in a naturalistic manner with the beard and hair in brown and the cross design in the nimbus coloured blue. A vine motif in brown fills in the area around the head and the border design was painted in black and red.

The imagery of both the "Markle Plaque" matrix and "The Holy Face in Profile" paper relief suggest a similar religious function, that is, as devotional images known in Germany as, Andachtsbilder. The themes most often depicted were those of the Virgin and Christ. This type of religious art object served the very personal needs of the fifteenth century laity who sought the closest possible means of religious expression and required the presence of religious images in daily life. The inscriptions on these two objects served the same purpose as hand-written, or printed, border inscriptions on fifteenth century woodcut prints, which invoked the protection of the saints, the Virgin, and Christ (See: Chapter Two).

In her book, discussing the relationship between prints made by the Master E.S. and fifteenth century artworks, Edith Hessig noted the correspondence between the print,

The Assumption of St. Mary Magdalene, and a group of figures from the Münnerstadt Altar by the sculptor, Tilman Riemenschneider, of the same theme (Figs. 132 and 133).(70) In both examples, the Magdalene is shown supported by six angels. Riemenschneider has depicted the Magdalene covered in hair, standing in a frontal posture, with her hands placed together in prayer. The Master E.S. print gives a more naturalistic rendering of the female body, retaining the long, flowing hair, for which the saint was known, and placing her arms in a modest pose, folded across her breasts. Her graceful posture, beginning with a slight tilt of the head to the right, is punctuated by the delicately curving lines following the front leg of the figure and ending at the tip of her extremely pointed foot (a stylistic feature characteristic of the Master E.S.). It is evident that the cluster of small angels, with their robes flying about them, are intended to be assisting the Magdalene on her journey upwards to heaven. The landscape below is described in a great amount of detail, with particular attention given to the luxurious plant growth. The birds, in this instance, appear to be creatures bound to the earth, in contrast with the floating company of human figures hovering above them.

Although nearly half of the composition is missing, the same group seen in the Master E.S. print was reproduced in a clay matrix made in the late fifteenth century (Fig. 134).(71) It was not cited in the observations made by Dr. Hessig. The matrix is 14 x 8,5 cm and the central composition would have been approximately 12 cm in diameter. The composition is viewed in the matrix in the same direction as seen in the print. It has not been reversed as in the case of the "Markle Plaque". The artist has captured the flowing curves of

the Magdalene's form, along with the characteristic "pointed foot". The plants are shown in much less detail, although a bird perched in the tree at the top right of the print is used again in the matrix composition. The small angels are also very similar to those depicted in the print. Instead of leaving the nimbus simple, without decoration, the artist who made the matrix composition chose to fill in the nimbus with lettering, which reads in reverse: "magda(lena)". Because this matrix is lacking a devotional inscription, such as that seen on the "Markle Plaque", it is possible that a more likely use for it was to make decorative relief appliqués, such as the Judgement of Paris and the Crucifixion (Figs. 117 and 121).

The three clay matrices, the Judgement of Paris, the "Markle Plaque", and The Assumption of St. Mary Magdalene, are the result of a production sequence that began with a stone original, such as, the St. Eustace in Cologne. These matrices were used with a variety of materials: papier mâché, wax, bronze, and clay, to make relief decoration on small furnishings and utilitarian objects, such as, wooden boxes and clay flasks. In addition to a purely decorative function, at least one of the matrices, the "Markle Plaque", must have served as a mould for making devotional plaques depicting the Virgin and Child with an accompanying supplication invoking the Virgin's divine protection.

All three matrices show the influence of fifteenth century prints, which contributes to the notion that an early function of printed images, specifically engravings, was as designs for craftsmen in various fifteenth century workshops. In this section, I have dealt specifically with Master E.S. prints and two fifteenth century clay matrices; however, the

whole study of the production of stone and clay matrices in fifteenth century Northern Europe, stems from the proposal that the Metropolitan sealprint, The Patron Saints of Regensburg, was made from a very similar procedure. A knowledge of this production method is also necessary in order to discuss the New York Public Library sealprint, which follows in the proceeding section.

The Virgin Crowned by the Trinity
S.2863m
147:123 mm
Bohemia (?), Late 15th century
The New York Public Library

The New York Public Library sealprint, The Virgin Crowned by the Trinity, was purchased for the library print collection in 1910. It is placed in a permanent frame consisting of mat boards. The scene depicted in this sealprint shows the Virgin kneeling in the centre of the composition with God the Father seated to the left and Christ seated to the right (Fig. 135). All three figures wear full, loose robes fastened at the neck. God the Father is shown wearing a triple tiara and has a full beard parted down the centre. He holds a book in his right hand, while the other hand is raised to support the crown over the Virgin's head. His nimbus is simple, created by three curved lines. The Virgin is depicted as a young girl with her hands held in prayer. The figure of Christ, while supporting the crown with one hand, rests the other on an orb placed on his lap. His nimbus is ornamented with a stylized cross, or lily motif. Behind the three figures is an intricate network of crossing lines with small dots placed within each diamond shape in the pattern. The two arches above God and the Virgin are created by simple lines, while that seen above the figure of Christ is portrayed in a twisted cord pattern. Completing the "Trinity" is the Holy Spirit, as a dove with its wings spread, hovering above the figure of the Virgin. A series of lines creating an aura around the form, radiate outward from its body. An inscription along the top edge of the sealprint reads: SANCTAM + TRINITAS + UNUS + DEUS, which is

translated as, "(The) Holy Trinity (is) One God".

The beard-type shown on the figure of God was common to East German artworks from the late fourteenth and early fifteenth centuries. The sealprint composition, depicting the seated figures of Christ and God the Father holding a crown over the head of the kneeling Virgin with the Holy Spirit (a dove) hovering above her, is shown in two panel paintings made during the second half of the fifteenth century in Poland (Figs. 136 and 137). The second example portrays a very similar type of dove and circular nimbus behind the figures' heads. An even closer corresponding composition is found in the central panel of a triptych which, again, is Polish dating from the late fifteenth century (Fig. 138). Although the figures of Christ and God are in reversed positions, as in the previous two panels (when compared with the sealprint composition) there remains a close similarity in other aspects, such as, the placement of the crown and hands of Christ and God the Father, and the kneeling Virgin who is in a frontal position facing the viewer with her hands held in prayer. A variation of the stylized motif, the lily nimbus, seen behind Christ's head in the sealprint is shown in a panel painting made in Poland, dated 1480 (Fig. 139). Here, a similar motif has been used in the decoration of the nimbus behind the head of Christ in a scene portraying The Lamentation.

The grouping of the figures seen in the sealprint has been compared to similar groups found in altarpieces from Bohemia made in the early fifteenth century.(72) Although a work dating from ca. 1495, the central section of a carved altarpiece from Bohemia shows the three figures grouped in a similar manner, with the Holy Spirit (dove) placed in

mid-air above the Virgin (Fig. 140). However, in spite of his suggestions that the sealprint composition was similar to East German and even Bohemian artworks from the fifteenth century, Professor W.L. Schreiber suggested a date for the sealprint of about 1460 and attributed it to the Upper Rhine region of Germany.(73) In the light of these comparisons, it would seem reasonable and more exact to attribute the sealprint to an eastern region of Germany, or perhaps even Bohemia; however, it does seem likely that it should be dated within the last quarter, or so, of the fifteenth century.

Description of the sealprint surface.

The areas of the sealprint lacking surface detail have a smooth, sculptural appearance, for instance, on the inner circle of God's halo and on the contours and moulded areas of the figures' robes (Fig. 141). The dotted pattern which fills in the background of the composition appears at first to be a repeated pattern, as if made with a small punch. But when looked at closely, one sees that the relief dots vary in size and in distance from each other and, therefore, were not likely to have been made with the same matrix. Most of the dots are less than a millimetre in diameter.

The relief lines are uneven and never project in a straight path. The best example of this is seen in the lines that define God's halo and those running up along the edges of the sealprint terminating in the arches over the figures (Fig. 141). Some of the lines are incomplete, as in the two left arches above the Virgin and God. All of the lines have a rounded surface which can be irregular and vary in thickness (especially in the arch above God). The lines radia-

ting outward from the dove are especially fine and pointed at the tips. The lettering used in the inscription is irregular and was most likely made by hand and not from matrices.

There are several areas on the sealprint surface which show layers of paper. There appears to be no additional substance between the layers. Along the lower left edge is a section that has had the top layer of paper torn away, leaving a second layer of uncoloured paper exposed (Fig. 142). This also occurs along the lower right edge (Fig. 143). Layers of paper can also be seen in areas where the relief has cracked, such as, the arch above Christ and the Virgin (Fig. 144). One of the numerous worm-holes found in the sealprint runs perpendicular to the right edge, about 5,6 cm from the top. This elongated, horizontal hole, when viewed from below tilting the sealprint slightly backwards, exposed four layers of paper; three of a similar thickness and one, the top layer of the image, noticeably thinner. This suggests that a finer grade of paper was laid down first (into the matrix) perhaps because it would have been more likely to pick up the finer details in the design than the heavier, coarser paper seen in the additional layers. The heavier paper would also have given more body and durability to the relief. The last area where layers of paper can be observed is found along the top edge to the left, again, in Figure 144. Here, the top layer of paper has been torn away destroying some of the letters in the inscription.

Dr. Andrew Robison, at The National Gallery of Art in Washington, D.C., confirmed my suspicion that the image was hollow, by saying that he had examined the sealprint with lighting, looking through the worm-holes and found that the

figures are concave on the verso of the sealprint relief.(74) Further evidence of this is the depressed body of the dove, damage perhaps caused sometime after the relief was made (Fig. 145). The nose of each of the faces in the three figures is smashed and distorted; however, these effects might indicate damage that occurred when the relief was still wet and not as a result of damage to the dried surface. A final observation may have had something to do with the production method used to make the sealprint.

Three small holes can be found in the top of the tiara, at the centre of the Virgin's head, and above the left hand of Christ. Photographs do not show these details well, but the holes penetrate down into the thicker areas of the relief, ending up somewhat parallel to the surface. Because of this, they are not extremely noticeable when looking at the image in an upright, vertical position, as it would normally be seen. They are not worm-holes but appear to have been created with an instrument. These holes, which do not have a decorative function, may have been a part of the production method, allowing the thicker areas of the paper to dry more quickly and thoroughly.

A few final observations deal with the surface treatment of the sealprint, which is a shade of brown umber, appearing slightly darker in some areas. In the areas where layers of paper have been torn away, the exposed surfaces are lighter brown in colour. Christ's robe has been painted in red and His hair is black. The Virgin's robes are faintly shaded in orange. The rest of the figures are the same dark brown colour of the background. Perhaps the use of colour, specifically on the figure of Christ, correlates with the decorative treatment of the arch above this figure, which is

different from those seen above the Virgin and God. A black border runs along the bottom edge of the print. There is also a slight sheen to the raised surfaces, indicating that a varnish may have been applied to the surface at one point in its production, or 'lifetime'.(75)

Method of production.

Two different methods of production were prosed for the New York Piblic Library sealprint, The Virgin Crowned by the Trinity. Dr. T.O. Mabbott suggested the following method of production, which he proposed for both this sealprint and the Metropolitan sealprint:

> "They were made, I think, with a single form a woodblock or metal-plate - which was cut, not in reverse, like an ordinary woodblock, but to look like the miniature bas-relief to be produced. The paper was then, I believe, placed over the plate, and pressed down upon it and 'printed by friction' - perhaps with a soft damp cloth - and allowed to dry. One of the two specimens known to us [the Metropolitan sealprint] shows slight shrinking at the edges, where the paper crinkled when pressed. No ink was used. The result was, as I say, a miniature hollow bas-relief - a pleasing enough work of art, but very perishable and hard to preserve."(76)

Professor W.L. Schreiber suggested that a metal-plate was used to make the New York Public Library sealprint.(77) He based this suggestion on the patterned background which he believed resembled the work of a goldsmith. Also, in his attempt to fit the sealprint production method into a known printing technique, he surmised that the image was intended to look like a traditional print with the lines created in ink on paper. The impression would have been made by pressing the paper deeply into a metal-plate matrix leaving a

raised surface, which he compared to that seen in pasteprints. In this case, he suggested that instead of "paste", a paper mass, or pulp, was used.

I believe that, in the light of the material provided in the first half of this chapter, the sequence: stone original- clay matrix- paper relief, is a more likely method of production. The following comparisons are made between the New York Public Library sealprint and the St. Eustace stone matrix, in order to show that the matrix used to make the sealprint could have been made in stone. If the original was made in stone, then (according to the sequence) this sealprint could have been made, either from a stone matrix, or a duplicate in clay.

The same surface characteristics and type of fine detail is observed in the St. Eustace stone matrix and The Virgin Crowned by the Trinity sealprint (Figs. 114 and 135). Both of the objects are comparable in size; the sealprint image is 14,7 x 11,3 cm, and the matrix is 10 cm in diameter. The lines of the reins extending from the horse's bridle are similar to those seen in the nimbus surrounding the head of God in the sealprint. They have an uneven yet fine and delicately rendered quality. The round surfaces seen in the horse's form and the hillocks in the landscape, resemble those found in the folds of drapery on the sealprint figures and in the contours of the faces. The small dots used to create the "flower motif" and also seen on the background architecture to the left in the matrix, are similar to those used to create the background pattern in the sealprint. One motif, the circle with a dot in the centre, seen on the harness and bridle, can also be found in the decoration on the book held by the figure of God. Finally, the 'slashes' seen on the

lower half of the saint's tunic in the matrix, resemble that pattern which runs along the arch above the figure of Christ. Clearly, not only was similar detail (as that seen in the sealprint) possible in the stone matrix, but at times there appears to be a close similarity in the patterns and motifs used in both compositions.

Two additional examples of stone matrices provide further technical evidence which proves that the New York Public Library sealprint was made from either a stone matrix, or a duplicate in clay. One matrix portrays The Annunciation and the other, the Madonna Lactanse (Figs. 146 and 147). A third matrix(not shown) depicting The Marriage of St. Catherine is dated "1493" and all three of the matrices are attributed to this period. The two examples shown here are 17 x 12,5 cm and are made in graphite. Because of the extremely fine details, the work is believed to be that of a goldsmith.(78) The scenes are similar to compositions in prints made by Martin Schongauer. Perhaps most readily noticeable, in comparing the Annunciation matrix with the sealprint, are the incised lines radiating from the dove shown in both compositions. Similar contours are shown in the folds of drapery and in the broad surfaces of the facial features. These outstanding examples of incised stone matrices display the height of refined, skillful craftsmanship which can be achieved in stone.

The inscription on the sealprint suggests that it was used as a devotional object. A coloured papier mâché relief made at Wienhausen (between 1450-1500), The Virgin Crowned by the Trinity, is not only similar in subject matter but in its rectangular format and the appearance of an inscription impressed along the lower edge of the composition (Fig. 148).

The inscription is not now legible, due to damage, however, the central composition is still complete. It was made from paper pulp, while the borders appear to be cut out from sheets of paper and attached separately. The central area measures 16 x 10,5 cm and with its borders, 20,5 x 15,5 cm. The Virgin is shown kneeling between the two figures of God and Christ, with the Holy Spirit (the dove) positioned above the group, descending from between two small angels. The representation and style of the image is comparable to works seen in the late fourteenth century.(79) However, additional evidence would suggest that the relief was made in the second half of the fifteenth century. The composition was treated in a colourful manner with details in the figures, braid-like patterns, and some lettering painted on the surface. This papier mâché relief is the closest comparison, both in its production and use to the New York Public Library sealprint.

The New York Public Library sealprint, The Virgin Crowned by the Trinity, was not made from paper pulp. This is proven by the existence of layers of paper seen through holes and tears in the surface. Up to four layers of paper can be seen in one particular section. This suggests that perhaps reliefs made from layers of paper in stone, or duplicate clay matrices; instead of paper pulp in metal matrices, constituted another area of paper relief production. The sealprint is very similar to the papier mâché plaques made at the abbey in Wienhausen. It must have been produced to serve the same market of religious souvenirs and devotional objects that figured so prominently in religious belief during the fifteenth century in Northern Europe.

Female Saint (St. Barbara?)
S.*2863q
78:42 mm
French, ca. 1500 (?)
Hunterian Art Gallery, Glasgow

This sealprint was purchased for the Hunterian print collection in the sale of Dr. T.O. Mabbott's collection at Sotheby's on the 24th of June, 1969 (Fig. 149).(80) The lines in the original composition are in relief and the impression was made in a single layer of paper. The sheet is laid down on a paper support and cannot, therefore, be examined from its verso side. The paper has been drawn on, at some point, in what looks like a sepia ink. The flattened areas on the surface were either never filled in with relief lines or were smoothed down, perhaps intentionally.

The sealprint composition is fairly simple showing a female figure dressed in full robes, standing, and slightly turned to the right. She has loose, flowing hair and wears a crown. Behind the head of the figure is a halo depicted in a simple fashion with curving lines decorated (on the left side) with small dots. The centre of the nimbus is not ornamented. Above the figure is a series of three trefoil motifs, which suggest a niche-like setting. The background is filled in with fine, horizontal lines in relief. The sharp quality of these lines indicates that a metal matrix was used to make the impression. Most of the composition has been drawn over in ink. It would seem that a substantial amount of this over-drawing was made up, perhaps because so many of the relief lines had either been worn down, or did not exist to begin with when the drawing was done. Some of the details are especially crude in representation.

This is most evident in the execution of the hands, created in short, single strokes, and shown holding what appears to be a rosary and a pen. The edges of the sealprint paper are uneven and it seems likely that sections of the composition are missing at the top and bottom.

In his description of the sealprint, Dr. T.O. Mabbott mentioned that the saint, "stands to the right holding a chalice".(81) This observation is hard to understand, as there is no chalice depicted in the present composition. However, it must have contributed to his identification of the image as that of "St. Barbara". St. Barbara is traditionally associated with a "tower" symbol, as she was imprisoned in a tower by her father because of her Christian faith. Additional elements, such as, a chalice with the Host suspended over it, a book, and a palm branch (symbols of her faith and martyrdom), are often depicted in combination with the "tower" symbolism.

A comparable representation of St. Barbara is shown in an engraving by Martin Schongauer, ca. 1480-90 (Fig. 150). Although the saint is positioned to the left, the general stance and placement of the arms and head are quite similar. There are even similarities in the heavy folds of material draped over each figure. It is quite possible that the image in the Hunterian sealprint originally held a small, open book, such as that seen in the engraving, and that the small tower shown in the engraving has been lost in the sealprint due to the closely trimmed edges.

It would seem that the method used to make the sealprint placed emphasis on the relief aspect of the lines, suggesting that the composition was intended to be viewed in relief and not as a flat, two-dimensional image, such as a print.

Because of this, it is likely that the production method correlates with an art medium that also emphasizes design created in low-relief lines and that the relief in paper may have had a specific use in that medium.

Method of production.

The Hunterian sealprint has certain technical and stylistic characteristics in common with relief decoration made on leather bookbindings from the late fifteenth and early sixteenth centuries. This method of decoration, known as "blind-stamped", did not require the use of gold. Instead, low-relief lines alone created the design in a monochrome fashion. Small stamps and rolls were used for repeated patterns and were impressed by hand. Larger, more elaborate scenes were depicted on panels, which because of their larger size necessitated the use of a mechanical press. The panels were usually made from metal, although a small number are known to have been made in wood.(82) Flemish binders used panel-stamps as early as the thirteenth century. The French began making and using panels at the end of the fifteenth century. Those made in Paris and Normandy are especially beautiful and often pictorial in design.(83) The French panels were exported to England where they were used and copied by English binders. In Germany, the use of panel-stamps for highly ornamental designs developed later in the sixteenth century.

The use of panel-stamps was a way of producing designs and compositions more quickly than individual, hand-tooled methods. The scenes were generally depicted in a small, rectangular format, or "compartment". In some instances,

several panels were grouped on one surface, while in other cases one large panel was used and may have depicted more than one "compartment". Some bindings have marks which, it was suggested, were the result of the metal panel having been nailed down to a wood-block before insertion into the press.(84) The panels are also known to have been tied on-to the binding with ropes and then pressed. Goldsmiths and die-cutters engraved the panels and from copying and re-copying the designs, they standardized the images and patterns.

The image of "St. Barbara" is common in panel-stamped designs made in Paris and Normandy during the late fifteenth and early sixteenth centuries. It was suggested that the popularity of St. Barbara in this specific group of panels was due to her having been the patron saint of Paris book-sellers.(85) She frequently appears in four-compartment panels and nearly always has the "palm" and "tower" symbols. Three French panel-stamped reliefs from the first quarter of the sixteenth century depict St. Barbara (Fig. 151). The panels were made in Normandy and used in England. The compositions are shown in rubbings made from the leather reliefs and provide the conventional representation of the saint common to French panel-stamped designs; that is, the saint appears holding a book and palm branch, standing next to a tower.

In a late fifteenth century bookbinding made in Paris, The Annunciation is seen in four "compartments" (Fig. 152). One panel-stamp was used for each scene as indicated by the repeated composition and the slightly oblique panel at the top left corner. Two bookbindings, also from Paris, made in 1512 and 1520 (respectively) show the use of one large

panel divided into four, small rectangular "compartments". The first, shows the figures of Sts. John the Evangelist, Barbara, Catherine, and Nicolas (Fig. 153). The second example shows the figures of St. John the Baptist, the Virgin and Child, "three listeners", and King David (Fig. 154). The large panels are both approximately 16 x 10 cm with the small "compartments" measuring about 8 x 5 cm. These two examples portray a "standard" composition found in French panel-stamped designs, that is, a small rectangular format with the figure standing beneath an arch, which is ornamented with smaller semi-circular arches within it. Each of these arches have points which terminate in trefoil motifs. This manner of depicting figures suggests the concept of figural sculpture placed within architectural niches and the effect is achieved in three-dimension by the low-relief lines of the leather impressions.

The Hunterian sealprint is depicted, with slight variations, in a similar conventionalized manner. The small, rectangular format measures 7,8 x 4,2 cm, the figure is standing and also placed beneath a series of three trefoil motifs similar to those shown in these panel-stamped designs. Perhaps the most difficult element within the sealprint composition to locate, in the context of both printed images and panel-stamped designs, is the roughly hatched parallel lines which stand out in relief in the sealprint background. It has proved virtually impossible to find this background treatment in printed images. The closest comparison in panel-stamped designs on bookbindings is seen in a binding made in Germany, around 1534 (Fig. 155). One panel, measuring 9,4 x 5 cm was used for the relief and the matrix, in this case, was made of wood. The scene on the left, depicting St. John

the Evangelist shows parallel hatching running horizontal to the figure, which strongly suggests that treatment found in the sealprint background.

This type of bookbinding decoration, utilizing incised matrices for the purpose of making detailed compositions in low-relief, more than likely required "proof impressions" in paper to be made during the course of work on each matrix. It is a fact, that decorative patterns consisting of small tools and gouges were too intricate to produce directly on the leather and needed working guidelines prepared beforehand. According to a twentieth century bookbinding manual, the procedure went as follows:

> "Strong, thin [bond] paper is cut to the exact size of the board and the tools are impressed in black, after the face of each has been held in the tip of a candle flame, which leaves a deposit of carbon on it."(86)

An additional contemporary reference suggests inking letter matrices and practising straight lines and spacing on paper.(87)

Another instance in which paper impressions were made was in the preparation of the "blocking-press" for making a panel-stamp relief.(88) A thickish, white paper, or thin card, was used for a "proof impression" from the panel, in order to see if the press was properly aligned, resulting in an even pressure across the panel surface. The blocking-press was not used until the 1830's, however, it is conceivable that this type of procedure was necessary even in earlier production when a mechanical press was being used to make a relief, as in the case of panel-stamped decoration. Although these are contemporary sources, it would seem that working methods would not have altered that much from those employed in the

sixteenth century. It also seems likely that craftsmen making panel-stamp matrices from wood and metal would have used paper during their work on completed designs and compositions.

We can never be certain that the image shown in the Hunterian sealprint is "St. Barbara". It could conceiveably be one of many young female saints popular in the late fifteenth and early sixteenth centuries. In production method, it does not resemble any other traditional printmaking methods used in the fifteenth century, which produced woodcut prints, metalcuts, and engravings. The relief impression was probably made from a metal matrix and does display the same type of line made by metal matrices in engravings. However, the emphasis on the low-relief lines in the sealprint indicates that the impression might be more reasonably placed in the working procedures followed by craftsmen making low-relief, panel-stamped decoration on leather bookbindings in the early sixteenth century. The small rectangular format and the placement of the single figure beneath a trefoil motif, indicate technical and stylistic similarities with this type of decoration. Descriptions of contemporary bookbinding decorating procedures suggest the use of paper for "proof impressions" and for practising the skillful placement of matrices on the leather bindings. No doubt paper was used by earlier bookbinders for similar purposes.

The Hunterian sealprint was dated at about 1460 and attributed to the Regensburg area. This date and localization were suggested according to what was known about the Metropolitan sealprint, The Patron Saints of Regensburg. The belief was that both sealprints came from the same area and period. As a result of the preceeding discussion in this

chapter, it is obvious that its date and origin have nothing to do with the Hunterian sealprint. There is very little evidence in the sealprint composition to suggest the identity of the image and perhaps even fewer stylistic elements to propose a definite date and localization; however, if it is a "proof impression" made from a metal panel-stamp then it is likely to be French, dating from the late fifteenth or early sixteenth century.

In conclusion, this study is intended to prove that sealprints are not as "puzzling" as suggested in previous accounts written in the early part of this century. However, their placement in the overall realm of fifteenth century prints may have made them unduly difficult to explain with regard to methods of production and use. It was not totally inaccurate to place low-relief impressions in paper, such as the sealprints, into the larger category of prints. The term, "print", does refer to a mark on a surface created by the pressure of a form regardless of whether or not the form has ink on it. The sealprints are curious because they were not made using an inked matrix and, thus, were not made from traditional printmaking methods. The procedure followed in obtaining research for this study deliberately pursued areas of fifteenth century art production which might help to explain, with more reasonable accuracy, how and for what purpose these objects were made.

Their production and use does, in fact, correlate with known methods of fifteenth century art production common to Northern Europe. This is specifically obvious in the case of The Patron Saints of Regensburg sealprint, where we are fairly certain as to both how the print was made and used. However, in the cases of the New York Public Library and Hunterian sealprints, there remain questions to which only proposed answers can be suggested at this time. Without a doubt, these three sealprints are unique records of both fifteenth century methods of art production and religious life of the period; indeed, they play a fascinating "dual role" as both examples of technical procedures and symbols of belief.

FOOTNOTES

CHAPTER FOUR

1. P. Kristeller, Die Apokalypse, (Berlin, 1916). The block-book is illustrated in this publication.

2. The Schreiber numbers and titles of the other woodcut prints from this collection are: S.747a, "The Trinity"; S.1210c, "Virgin and Child with St. Anne"; S.1376d, "St. Christopher"; S.1413b, "St. Erasmus"; S.1489a, "St. Gregory"; S.1603a, "Mary Magdalene"; S.1693a, "St. Sebastian"; S.1708d, "St. Ursula"; and S.1730q, "St. Vitus".

3. H.W. Davies, Catalogue of a Collection of Early German Books in the Library of C. Fairfax Murray, Vol. 1, (London, 1962), p.1.

4. Ibid.

5. K. Köster, "Ein rätselhafer 'Siegeldruck' des funfzehnten Jahrhunderts aus Regensburg," Bibliothekswelt und Kulturgeschichte. Eine internationale Festgabe für Joachim Wieder zum 65. Geburtstag dargebracht von seinen Freunden, (Munich, 1977), pp.123-137. The appearance of Sts. Denis, Emmeram, and Wolfgang as a 'trio' occurs as early as 1100. p.133.

6. T.O. Mabbott, "Seal-Prints and a Seal-Paste-Print of the Fifteenth Century," Bulletin of the New York Public Library, Vol. 32, (1928), p.515.

7. Köster, op. cit., p.125.

8. "Wolfgang, St.," New Catholic Encyclopedia, 1967, XIV, pp.987-988.

9. "Denis, St.," New Catholic Encyclopedia, 1967, IV, pp.765-766.

10. "Emmeram, St.," New Catholic Encyclopedia, 1967, V, p.307.

11. Mabbott (1928), op. cit., p.516.

12. Mabbott (1928), op. cit., p.516, "There is no proof that the prints were pasted on the block-book leaves by the Fifteenth Century owners -- the chances are against it, for a fragmentary Sixteenth Century etching accompanies them."

13. Köster, op. cit., p.125.

14. M. Lehrs, Geschichte und kritische Katalog des deutschen, niederländischen, und französischen Kupferstichs in XV. Jahrhundert, Vol. 4 (Vienna, 1910), p.204, No.3. Illustrated in the Tafelband, p.126, No.351. A small group of engravings were made by the Master of St. Denis, in the late fifteenth century in Regensburg. One of the engravings, "St.

FOOTNOTES: CHAPTER FOUR continued:

Paul," was found pasted in a manuscript from the abbey of St. Emmeram. Geisberg attributed this name of the artist. From the noticeable influence of Schongauer's style, the prints have been dated post-1480. A definite date is not possible to attribute; however, the localization is most likely that of Regensburg based on the "Three Patron Saints of Regensburg" engraving.

15. Mabbott (1928), op. cit., p.515; Köster, op. cit., p.125; Davies, op. cit., p.1.

16. E.W. Hoffman, "Some Engravings Executed by the Master E.S. for the Benedictine Monastery at Einsiedeln," The Art Bulletin, XLIII, (1961), pp.231-233; .."Conrad [of Constance] procured from Pope Leo VIII a confirmation of the dedication angels performing the dedication rites in the chapel at Einsiedeln and a papal bull of November 11, 966, which allowed the celebration of the anniversary of the miracle and granted remission of sins to pilgrims who visited the shrine."....In 1464, the Abbot [at Einsiedeln] Gerold of Hohensax made a trip to Rome in order to procure, "from Pope Pius II a bull ratifying the tenth century document confirming the miracle of the angel dedication"... Dr. Cohen suggested that both symbols (the Tiara and the Crossed-Keys) refer to the above papal bulls confirming (and re-confirming) the miraculous angel dedication, "which, since they granted remission of sins to the visiting pilgrims, should logically be represented somehow on the devotional items. Their presence may well have been requested by Abbot Gerold himself in commemoration of the bull of 1464 which gave full indulgence to pilgrims"... .

17. Cohen, op. cit., p.233.

18. "Power of the keys," New Catholic Encyclopedia, 1967, VII, p.484.

19. Davies, op. cit., p.2.

20. Köster, op. cit., p.131.

21. Köster, op. cit., p.132.

22. Ibid.

23. Köster, op. cit., p.133.

24. Davies, op. cit., p.2.

25. Köster, op. cit., p.133.

26. Köster, op. cit., p.134.

27. H. Appuhn and C. von Heusinger, "Der Fund Kleiner Andachtsbilder des 13. bis 17. Jahrhunderts in Kloster Wienhausen," Niederdeutsche Beiträge zur Kunstgeschichte, Vol. 4, (1965), p.172. "Papierreliefs wurden über Metallmodeln

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abgeformt. Dafür ist aus dem St. Katherinenkloster in Nürnberg das folgende Rezept aus dem Jahre 1510 überliefert.

"Zu trucken mit papir. Item wiltu pild trucken, die derhaben sein, von papir als (ob) sie von holz gesnitzet sind oder gewechs oder rosen oder ander matery, welcherley das sey, so nym zwen pogen papir oder drey wie vil du der matery geprauchen wilt, und die zureiss zu kleinen stucken, und thu die in einen saubern hagen und geuss ein kalt wasser daran, und setz es zu dem feur und lass es synden zwu stund, und darnach seyh das wasser herab und pall es daraus und stoss sie in einem morser als lang bis sie bey einander belieb; und nym denn ein form von kupfer oder von pley und nym die gestossen matery und leg sie in die form des ersten gar dünne und wenig und subtil darein. darnach ye lenger ye paser alles dick du es haben wilt und stoss es darein mit einer herten pursten und nym denn ein warm tuch und tunk es gar hert hinen, damit so zeucht es die feuchtigkeit heraus und num denn ein ander warm tuch vier oder fünffach und leg es auf die form oder ein ticken filz und leg ein pret darauf und leg es unter ein press ein firteil einer stund und thu es denn heraus und nym denn einen warmen zigelstein und leg ihn darauf und las in ein weil da auf ligen und darnach klopf an die Form, so schelt es sich herab und wirt scharpf gut."

28. A. Schnütgen, "Sieben Papiermache-Reliefs des späteren Mitelalters," Zeitschrift für christliche Kunst, Vol. 23, (1910), p.35.

29. K. Rathe, "Ein Architektur-Musterbuch der Spätgotik mit graphischen Einklebungen," Festschrift der Nationalbibliothek in Wien, (Vienna, 1926), p.689.

30. H. Appuhn, Der Fund von Nonnenchor, (Wienhausen, 1973).

31. Appuhn and von Heusinger, op. cit., p.227, No.83.

32. Appuhn and von Heusinger, op. cit., pp.228-229, No.85.

33. Appuhn and von Heusinger, op. cit., pp.222-223, No.76, Fig. 200.

34. E. Hessig, Die Kunst des Meisters E.S. und die Plastik der Spätgotik, (Berlin, 1935), p.103.

35. I would like to mention here, that my suspicions as to the production methods used to make the Metropolitan sealprint were confirmed later by correspondence with Dr. Köster and the information in his article.

36. Köster, op. cit., p.128. "Gerade die Gussmodel für Pilgerzeichen waren aber so gut wie immer in Speckstein oder Schiefer geschnitten, hierzulande -- und das gilt natürlich besonders für den süddeutschen Raum -- mit Vorliebe in Soln-

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hofer Stein."

37. Köster, op. cit., p.129.

38. Ibid. "Ein Werkstück also, das normalerweise nicht zur Aufbewahrung bestimmt war, das aber hier -- durch welchen Zufall auch immer -- erhalten und durch seine frühe Aufbringung auf das schützende Blockbuchblatt bis in unsere Tage bewahrt geblieben ist?"

39. Köster, op. cit., p.136. It was recorded in the chronicles of Leonhart Widmann that 27,000 pilgrim-badges (made from tin, silver, and silver-gilt) were sold on St. George's Day (April 23) in 1520 at the Schönen Maria pilgrimage site in Regensburg. Edith Hoffman pointed out that 130,000 various souvenirs consisting of: engravings, drawings, medals, coins, and reliefs, were sold at Einsiedeln during the four day festival there in 1467. Hoffman, op. cit., p.232.

40. Köster, op. cit., p.128. Die-cutters usually handled the tin-lead metal badges and goldsmiths the silver and silver-gilt badges.

41. F. Arens, "Die Ursprüngliche Verwendung gotischer Stein- und Tonmodel," Mainzer Zeitschrift, Vol. 66, (1971).

42. Arens, op. cit., p.110.

43. Arens, op. cit., p.108. The recipe for making Springerle is given here.

44. Arens, op. cit., pp.108-109.

45. Arens, op. cit., p.108.

46. Arens, op. cit., pp.111-112. There are about seven stone matrices that are dated between 1451 and 1530. These are illustrated by Dr. Arens.

47. This clay matrix was erroneously titled, "Dream of a Knight" (Traum des Ritters) at the Mittelrheinisches Landesmuseum, Mainz. Neither it, nor the corresponding appliqué on the Nürnberg box are included in the Arens' article.

48. This flower motif is also found on another clay matrix in the Mainz collection, the "Hermit with a Young Woman", and in several of the matrices illustrated by Dr. Arens.

49. All of the stone and clay matrices illustrated by Dr. Arens that do have inscriptions, show them in reverse. Dates were not reversed unless they formed part of the main composition intended to be seen in relief. They are generally found either on the matrix border or on the back of the plaque. This would indicate that the date had nothing to do with the theme of the matrix composition and may have served as a means of documentation made by the craftsman.

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50. A second example of this type of papier mâché appliqué on the lid of a box is in the Schnütgen-Museum, Cologne. The subject is the "Virgin and Child with St. Anne" and it is attributed to the Lower Rhine, or Westfalian, region, dating from the first half of the sixteenth century. The Nürnberg box is dated at the end of the fifteenth century, which I believe to be a more accurate estimate for both pieces. I have personally examined the Schnütgen box during a research trip to Cologne in the summer of 1980. In some areas, one could see leaves of paper (6-7) and over the outside of the box, the surface had a canvas-like texture, perhaps cloth over the paper and wood form. The surface was uneven and lumpy and the shape of the box was warped and uneven, also. A ridge ran around the appliqué on the box lid, indicating that it was laid down onto the surface probably after the structure was formed. No known matrix nor engraving has been found to correspond with the composition on this box. The box is mentioned in the Schnütgen article previously cited, Fig. 5.

51. Lehrs, op. cit., pp.134-135, No.90. The correspondence between the engraving and the matrix is noted by Lehrs. A second engraving by the Master of the Banderoles, "The Deliverance of the World Through the Crucifixion"(L.85), shows the same prolific use of banderoles and numerous inscriptions by the characters depicted in the scene. pp.130-134.

52. Lehrs, op. cit., pp.134-135.

53. G. Reineking von Bock, Steinzeug, (Cologne, 1971), No.250.

54. G. Reineking von Bock, "Die Bedeutung Kölns für das Rheinische Steinzeug im 16. Jahrhundert," Die Weltkunst, Sept., 1981.

55. Reineking von Bock (1971), op. cit., No.250. The engraving is described in, Lehrs, Vol. 2, pp.205-206, No.144.

56. Arens, op. cit., pp.106 and 108.

57. A. Shestack, Master E.S. Five Hundredth Anniversary Exhibition, (Philadelphia, 1967), p.iii.

58. Shestack, op. cit., p.v.

59. R.W. Gassen, Druckgraphik des 15. Jahrhunderts der Meister E.S. und Martin Schongauer, (Ludwigshafen am Main, 1980), p.14.

60. Gassen, op. cit., p.15.

61. Gassen, op. cit., p.14.

62. Shestack, op. cit., p.vii.

63. Shestack, op. cit., p.vi.

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64. Shestack, op. cit., p.i.

65. C. Minott, "A Group of Stained-Glass Roundels at the Cloisters," The Art Bulletin, XLIII, (1961), p.237. There are six mother-of-pearl carvings in the Victoria and Albert Museum, London, which have corresponding Master E.S. print compositions.

66. This information was obtained by Ms. Diana Fox for her Ph.D. thesis which deals, in part, with the localization and description of the "Markle Plaque". Her references were, William Flynn in the Department of Archaeology, University of Glasgow, and Dr. A.J. Kennedy in the French Department, University of Glasgow.

67. Lehrs, op. cit., p.129, No.69.

68. Appuhn and von Heusinger, op. cit., pp.230-231.

69. Ibid.

70. Hessig, op. cit., plates 84a and 84b.

71. K.H. Esser, Mittelalterliche Werke aus dem Mainzer Raum, (Mainz, 1959), p.47, No.132.

72. Mabbott (1928), op. cit., p.514.

73. Ibid.

74. I spoke with Dr. Robison in April 1981 during a research trip to New York, Boston, and Washington, D.C..

75. Mabbott (1928), op. cit., p.514. Dr. Mabbott made the comment that, "The print is now brown (whether originally so, I am not sure) but portions have been coloured red." This sealprint and perhaps some of the pasteprints may have been varnished in the nineteenth century when sporting prints and drawings, such as those made by Samuel Palmer in the Ashmolean Museum, Oxford, were treated in this manner.

76. Mabbott (1928), op. cit., p.512.

77. W.L. Schreiber, "Die Älteste Stereotyp-Matrize," Gutenberg Jahrbuch, 1927, p.44.

78. Arens, op. cit., p.iii.

79. Appuhn and von Heusinger, op. cit., pp.224-225.

80. Sotheby's, Mabbott Collection Sale Catalogue, (London, 1969), June 26, No.26.

81. P. Heitz, ed., Einblattdrücke des XV. Jahrhunderts, Vol. 99, "Relief Prints in American Collections," T.O. Mabbott, 1940, No.16.

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82. J.B. Oldham, Blind Panels of English Binders, (Cambridge, 1958), p.2. Also, some extremely beautiful panel-stamped reliefs were made in Cologne from metal matrices. Their style is very similar to metalcuts made in Cologne, as they exhibit a large amount of fine detail in the compositions. See: J. Theele, "Schrotdruckplatten auf Kölner Einbänden," Gutenberg Jahrbuch, 1927, p.256.

83. D. Miner, The History of Bookbinding, 525-1950 A.D., (Baltimore, 1957), p.77.

84. Oldham, op. cit., p.10.

85. Oldham, op. cit., p.36.

86. E. Burdett, The Craft of Bookbinding, (London, 1975), p.255. A second source mentions a similar procedure using paper for impressing blackened matrices: "The binder having designed the pattern with which he intends to ornament his book, proceeds to work out the same on a sheet of thin, tough paper, precisely as he would have it appear upon the finished leather, in regard both to its size, and to every other particular. This he does, by blackening the actual gouges, fillets, and other tools, which he wishes to employ in the execution of the work, in the smoke of a candle-flame, and by making impressions of them, in their proper places, on the paper. When the pattern is completed, it is accurately placed upon the board, which it is to decorate, being secured at the corners by a little paste, and the pattern tooled, through the paper, on the leather. A skilful finisher will not need this elaborate preparation, but will content himself by setting out the chief points of his design upon the leather, with the aid of a pair of compasses. The paper is now removed, and the leather washed or dampened with vinegar, which should be rubbed equally into the leather, by means of a brush." H.P. Horne, The Binding of Books: An Essay on the History of Gold-Tooled Bindings, (London, 1894), p.50.

87. A.W. Johnson, The Thames and Hudson Manual of Bookbinding, (London, 1978), p.166.

88. Burdett, op. cit., pp.238-239.

CHAPTER FIVE

AN INTRODUCTION TO THE STUDY OF PASTEPRINTS.

The term "pasteprint" applies to a certain type of print made in the second half of the fifteenth century that has a low-relief image in a "paste" made on paper. In appearance, this substance is thicker than traditional fifteenth century printing ink. In this respect, both embroidery-prints and flock-prints are considered forms of pasteprints. These types of prints have been discussed in the preceeding chapters. This chapter is concerned with those prints traditionally known as, pasteprints, which display the use of layered substances adhered to the paper surface and which have a distinctly embossed look to their designs. Most pasteprints are in various shades of brown. However, some exist which are bright gold with black outlines and painted areas, such as, the faces and hands of the figures. The prints exist in various states of wear and corrosion. Some images are hardly recognizable and others are almost perfectly preserved. There appears to be a basic method of production that was used to make all of the prints, with variations only in the types of materials adhered to the paper surface. Because of the variety in their visual appearance and physical make-up, the prints are best described by photographs. However, even a photograph can be deceiving as the layered structure of substances in the paste is not evident without the use of a stereomicroscope. Lacking this type of equipment for observation, most early authors in this century writing on the production method used to make pasteprints assumed that a traditional printing method was used and that the paste only consisted of one layer.

This study is concerned chiefly with the production method used to make pasteprints, the types of substances found on pasteprints surfaces, and similar methods of production shared by other art forms in late fifteenth century Northern Europe. First, why are there metalcut prints of the same composition as a pasteprint yet in reverse? Second, what type of production method would have left a layered sequence of substances on the pasteprint surface? Third, how does the proposed techniques for making a certain group of pasteprints in the Germanisches Nationalmuseum in Nürnberg relate to the fifteenth century production of imitation brocade appliqués? The last question asks, how do the various types of pasteprints relate to one another? Were cheaper materials and duplicating methods used to imitate those prints made from precious metals using hand-production techniques? If this was the case, then perhaps a highly developed market for pasteprints existed which was similar to other fifteenth century art markets, such as that which developed from the production of pilgrim-badges (See: Chapter Two, "The pilgrimage and related industry of souvenirs"). A catalogue listing the pasteprints which I have personally examined will follow this discussion.

Reversed images - what type of matrix?

Several pasteprints have metalcut print counterparts that appear to have the same composition except that the pasteprint composition is in reverse to the metalcut. One example of this is The Madonna and Child in a Gothic Interior (S.2825) and its metalcut counterpart (S.2492x) (Figs. 156 and 157). Technically, the metal plate always produces an image in re-

verse to its composition; therefore, it is unusual to find a printed image that is not in reverse to the plate but actually running in the same direction as the design on the plate.

If the two prints (S.2825 and S.2492x) were made from the same metal plate composition, then how would it be possible to make a pasteprint composition that is in reverse to the metalcut print? Making cast duplicates of engraved designs in metal was not an unknown technique in the fifteenth century. In Italy, goldsmiths working in the niello technique made duplicate designs in the form of sulfur casts. Niello is a decorative technique in which the jeweller creates an incised design in metal which is then filled with a black mixture and heated to a liquid state. The black substance then covers the metal entirely and is burnished to create a black on a silver or gold design. In making a sulfur cast of the incised design in metal, a cast had to first be made in wet clay. After drying, the clay relief was used as a mould and amorphous sulfur was poured over it. This hardened in time and the clay matrix was then removed leaving an incised duplicate of the original design. "These sulfur casts were amazingly fine and gave every detail that was engraved on the silver [or gold] plate."(1) Impressions could then be taken by inking the sulfur matrix and printing them by "friction" on paper. The casts were not strong enough to be placed in a printing press but were durable enough to be used as art objects in their own right as decoration on religious objects. These casts would have made a print that was in the reverse direction to that which was engraved on the original metal surface, or, a print similar to a metalcut print. An example of a niello sulfur cast and a niello print made from a cast are shown in Figures 158 and 159. Because the inked impres-

sions were in reverse to the original design this was not the method employed in making matrices for pasteprints.

"There is documentary evidence that before and around the middle of the century [fifteenth] entire books were printed from plates cast from wooden or metal intaglio plates, by a process known as getté en molle."(2) The word molle, or moule, refers to a mould made from an incised carving generally in wood but sometimes in metal or stone. The getter (or jetter) in getté en moule describes the production of a metal relief matrix (having the main design lines in relief) made by casting from a mould. Gutenberg experimented with this method of producing cast type. It also suggests a method for producing a relief matrix that would make an inked impression with its composition in the same direction as the original plate design. An experiment made by Mr. Lessing J. Rosenwald shows how this can be achieved by making a relief cast from an incised copper plate.

The procedure is shown in Figure 160. First, a print made from the copper plate is shown in Figures (a) and (b). Next to this is a relief plate made from fiberglass cast from the copper plate (c). The three compositions shown below are impressions pulled from the inked relief cast and depict the composition in the same direction as that shown in the original copper plate (b). The "low height" of the design ridges on the fiberglass relief made it almost impossible to clean away all of the ink from the background areas in the design. The last Figure on the right is the best impression made during the experiment.

Gutenberg would, of course, have used a soft metal instead of a plastic for the relief plate. This method of producing cast relief matrices and its relation to the production

of pasteprints is discussed by Carl Wehmer.(3) He proposed that the craftsmen who made pasteprints never intended to use the original incised metal plates for pasteprints but did, in fact, utilize casts made from the plates in a lead and tin mixture.(4) The point intended here, is that the technology was available for craftsmen to make relief matrices that would produce prints with their compositions corresponding in the same direction as the original incised designs which is the case for some pasteprints, i.e., those having metalcut counterparts.

This method of producing a matrix for printing pasteprints does not explain the characteristic negative, or dark line, image seen in most pasteprints. A good example of a positive white line metalcut and a negative dark line pasteprint with the same composition is shown in Figures 161 and 162. This pasteprint of The Crucifixion (S.2791) held in the Guildhall, London corresponds with a metalcut (S.2344) in the Staatliche Graphische Sammlung, Münich. The metalcut displays a positive white line image made by inking and printing the relief areas of an incised metal plate. If the pasteprint version was also made by printing from a relief matrix, then it too should have its main design lines in the lighter brown tone of the print and not in the darker tone. This is an observation that throws doubt on the relief matrix production described above which would appear, at first, to solve the problem of reversed printed compositions found in corresponding metalcuts and pasteprints. However, it is based on the assumption that a type of printing was used in making pasteprints, inking the relief areas and making the image from those areas of the design. But we are not entirely certain that a printing technique was used in the production of pasteprints,

so that this observation should not totally discredit the proposed theory above. The technology used to make pasteprints lies somewhere between the categories of printing and a form of low-relief embossing. It appears to be made up of some technical aspects from each of these two areas of art production. Having discussed the problems of making a pasteprint matrix, we will now look at the paste surface and its complex structure.

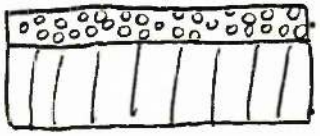
A layered sequence to the pasteprint surfaces.

In the cases where the print surface has either been chemically analyzed or observed through a stereomicroscope, these pasteprints show a distinct layered structure to the surface paste. This suggests that a method of production consisting of stages, in which each layer was applied, was used to make the 'paste' in pasteprints. An interesting method involving a layered paste was proposed by Dr. Erwin Kistner in 1950.(5) He studied a group of pasteprints held in the Germanisches Nationalmuseum in Nürnberg and determined from his observations that the production process consisted of four stages: 1. prepare a gelatine film, 2. combine this layer with additional materials, 3. impress this composite 'paste' with a metal plate, and 4. peel the embossed sheet off of its support, trim it with scissors, and mount it on a prepared paper surface. This method is shown in Diagram A.

Dr. Kistner suggested that, to begin with, a metal or stone base was greased and onto this a thin layer of a heated gelatine solution (similar to glue or sizing) was poured and left to congeal. This layer was then peeled off from the base support and placed onto a greased wood-block.

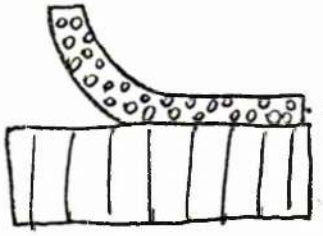
KISTNER METHOD

1. Prepare gelatine layer.



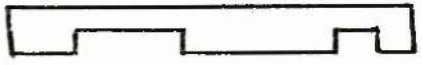
..... thin layer of heated gelatine

..... greased metal or stone base

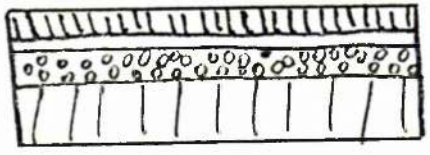


..... remove gelatine layer after cooled and hardened

2. Prepare layers for impression.

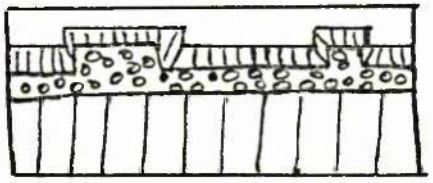


..... metal plate matrix



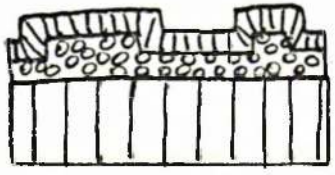
layers of:
metal foil
egg-white
gelatine film
..... greased wood-block

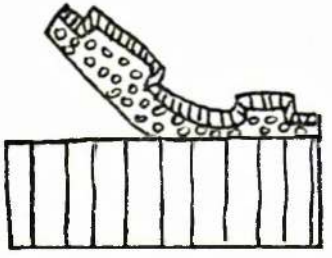
3. "Print" with metal plate.



metal plate impressed on composite layers

4. Peel off wood-block; cut edges; mount on prepared paper support.





Final layer sequence.

(Diagram A)

The surface was brushed with egg-white and a layer of gold foil, or sometimes "silver twist" (a composite of silver foil and gold leaf), was adhered to the gelatine film. The impression was then made using a metal plate which was applied from above and probably required the use of a mechanical press for adequate pressure. After a short drying period the composite layers (gelatine film, egg-white, and metal foil) could then be peeled away from the wood-block and the sheet was trimmed along the impressed edges using scissors. The impressed sheet was then adhered to a paper surface prepared with a sticky red bole ground. In order to glue the edges of the sheet down, the borders of the red bole had to extend beyond the dimensions of the sheet and this would explain why in many pasteprints there appears to be a brushed on rust coloured stain which extends from the edges of the paste substance. Parts of the composition were then painted by hand (faces and hands of the figures) and sometimes a red border was painted around the impressed sheet.

I have not personally examined the pasteprints studied by Dr. Kistner in Nürnberg. However, one pasteprint I have examined, St. John the Evangelist (S.2850) in the Staatliche Graphische Sammlung in München, may have been made using a method similar to that proposed by Dr. Kistner (Fig. 163). The similarities are mainly with regard to what appears to be a layer of gold and extremely straight (trimmed?) edges which are bordered in red. Details in the figure (face, hand, and feet) were most likely added by hand in a white pigment. The relief lines in the design are in gold and the lower areas are filled in with a black pigment. This could be ink; however, the substance does not always follow the gold relief lines and may have been painted by hand. It is important to note,

that the Kistner method does not suggest an answer as to how any additional surface colour (other than small details) such as this might have been done. It may have been either during, or after the impression was made. As mentioned above, the face, neck, hand, and feet of the figure are painted in a thick, white, chalkish substance and the outlines in these areas appear to have been drawn with a pen or a fine brush in black. The pasteprint has painted borders in red, blue, and orange.

One can observe areas on the surface where the black and gold has chipped off and an orangish stain appears beneath. This coloured 'stain' is common to all pasteprints and ranges in colour from an orange-brown to a dark brown. It appears to be some type of adhesive, such as resin or a vegetable gum, that was applied to the paper surface before the paste (gelatine film?) was laid down. Also, silver appears along the edges of cracks which run in the black area to the left of the figure's head. Silver also appears in the hair of the figure. This suggests the use of "silver twist" (the layered silver and gold foils) instead of real gold foil. Simply by observing the surface of this pasteprint, the following layered structure can be suggested: paper, adhesive, paste substance, "silver twist", black pigment, and painted details in black and white. This sequence of materials corresponds to that which would have resulted from the Kistner method of production. The only difference is that a large amount of this design (the St. John pasteprint) is made from a black pigment on top of the metal foil relief, which may have been printed or else added by hand.

Other authors have suggested the use of a paste material that was adhered to a piece of paper and embossed from

above. Dr. A.M. Hind cited the Münich pasteprint (St. John S.2850) as the "most perfectly preserved example" in which gold is found.(6) He suggested a printing method using gold leaf over a "thick paste" and impressing a "clean plate" to create relief lines in gold. The areas between the lines were then filled in with black, presumably by hand. It is certainly one of the best examples of this type of pasteprint; however, the method proposed by Dr. Hind follows too closely a traditional printing technique. The tendency to explain the production of pasteprints along the lines of traditional printed images, such as engravings, is shown in another author's proposed method of production.

In discussing "Class IVB, Normal pasteprints with moderately thick paste", Dr. T.O. Mabbott suggested the following production method:

> "When a print was made, the paste mass (of uncertain composition) was glued to the paper, and thereafter the impression was taken. The plate was probably above the paper in printing, differing in this from other printing processes. In any case the plate pressed through the glue and the principal lines of the design were sunk through to that level, while the paste was molded into form in the lower surfaces of the plate.
> Usually no ink was used - the paste itself being employed much as the ink is in an engraving."(7)

Both authors suggest that the paste was first adhered to the paper and then a metal plate was applied from above, embossing the design into the paste substance. As Dr. Mabbott suggests, the relief design lines were made not only in the top layers but through to what he terms "the glue", or adhesive, ground. The two methods follow a traditional printing approach in that one of the two surfaces is prepared before printing, meaning either the plate or paper. However, these methods depart from

a traditional printing method, in that instead of laying the paper onto the plate, the plate is applied from above the paper. Could it be that the pasteprint method of production did not originate from a "traditional printing technique" used in the fifteenth century but from some other form of embossing low-relief designs into a paste substance?

Dr. Kistner does not cite any references with regard to the method of production he proposed for the pasteprints in the Germanisches Nationalmuseum in Nürnberg. However, some known fifteenth century 'recipes' used by craftsmen to make impressions in paste sheets correspond with the proposals made by Dr. Kistner. The first of these is taken from what is known as the Bolognese Manuscript, a fifteenth century 'recipe book' similar to that found at the abbey of St. Katherine in Nürnberg (See: Chapter Four, "The Patron Saints of Regensburg" sealprint).

> "Take 1 oz. of tragacanth, and put it to soak in sufficient water to cover it for the space of one day and one night; then take a pound of white lead and grind it with the moist tragacanth. Then let it harden till it is as stiff as dough, and knead it well with your hands, adding to it a little white honey in order that it may not crack. Anoint your hands with the honey, and let the paste be well kneaded; then impress whatever you like upon it, and the impression will be sharp and fine. You may make it of whatever colour you please by mixing some colour with it, and when you have taken the impression, you must glue it on with glue made from parchment clippings, and let it dry, and when it is well dried polish it with a tuft of cotton, and it will become shining like a bone, etc."(8)

In this method, a paste is made in which an impression, which is "sharp and fine", can be taken, then glued to a support (paper?), dried, and polished. The paste can even be coloured which brings to mind the various shades of pasteprints, from dark brown to rust and light orange.

A second 'recipe' comes from a 'recipe book' known as the Marciana Manuscript, which dates from the early sixteenth century (before 1513).

> "To make a yellow paste like amber —
> Take of gum arabic oz. 3, of varnish in grains oz. 2, pulverize and mix them well together, place them in a glazed pipkin, and mix them with a drachm of saffron tempered with common water, and let them in that state until they become like a paste; then take the yolk of an egg, strain it through an old but good linen cloth, incorporate it with the before-mentioned ingredients, and model with it what you please. Then dry it in the sun until it is hard, and anoint it with white of egg which has been well beaten; dry this also in the sun, and then varnish and gild it according to your pleasure."(9)

This 'recipe' is especially interesting and perhaps relevant to the production of pasteprints in its use of varnish and gilding as the final decorative process.

Similar methods to these involving the use of a metal foil and a paste were used in the production of thin, embossed sheets which imitated brocade textiles on wooden sculpture and on the panels within altarpieces. This method of decoration was popular in the late fifteenth century in Northern Europe during the same period as that proposed for the production of pasteprints. More importantly, however, is the fact that these methods utilized matrices for creating a relief design in a metal foil and paste which was ultimately finished in gold and coloured glazes. This area of fifteenth century art production may have contributed to the technology used to make pasteprints.

Imitation brocade appliqués.

In the Romanesque and early Gothic periods, relief decora-

tion was created directly on the surface of panel paintings and sculpture by moulding, stamping, and sometimes carving a thick layer of gesso paste applied to the wooden surface. This low-relief decoration was then gilded and painted in coloured glazes. It was intended to imitate metal repoussé work and also give the appearance of richly ornamented contemporary garments, which were often embellished with precious metals and jewels. The depiction of fabric patterns, both in panel backgrounds and on the garments of sculptured figures, was made by using coloured glazes over metals, such as, tin and silver, in order to give a sheen to the surface, more like the original silk used in contemporary garments.

In the late Gothic period (ca. 1460-1500), fabric patterns were reproduced in low-relief on the wooden sculpture or panel surface. Brocade textiles became increasingly available and popular in the fashions of the late fifteenth century in Northern Europe (Fig. 164). This trend in fashion can also be seen in the increased numbers of sculpture with brocade patterns imitated in low-relief appliqués. This type of surface decoration was pre-fabricated in sheets which were made from various substances, such as, chalk, wax, resin, and pure beeswax. They were cut out in squares ranging in size from 6,2 to 23,9 cm.(10) The painting and gilding was completed before the sheets were applied to their final surfaces. Trends in fashion influenced the increased production and popularity of imitation brocade and the use of wax-based decoration is likely to have been introduced to production methods because of changes in the style and manner of representing surfaces in altarpieces.(11) Compared to gesso, this wax-based decoration was more pliable during its application to sculpture surfaces. This would have been especially important in covering the exa-

ggerated folds and recesses created by the late Gothic sculptural style.

The use of beeswax and wax-resin pastes correlates with the production of pasteprints as suggested in the preceeding section. Brocade appliqués made from these materials have been found on a limited number of pieces, a few statues and painted shutters and walls of shrines. The existance of a small number of artworks with wax-based imitation brocade is due to two specific factors. First, the wax-based imitation brocade is more fragile than, say, a gesso type. It becomes brittle with age and this weakens its adherence to the sculpture or panel surface. Second, restoration techniques in the late nineteenth century, specifically wax immersion and chemical agents intended to remove oil-based paints, resulted in the loss of wax-based surface decoration.(12) The technique of replacing the wax-based imitation brocade was unknown at that time, so that when a piece was being refurbished, the decoration remains were scraped off and the surface was repainted.

The origins of artworks having imitation brocade decoration, which have survived, are generally limited to areas in Northern Europe. Those pieces having pure beeswax decoration come from the Upper Rhine region, Franconia, and Swabia, while those with wax-resin decoration are specific to the Middle to Upper Rhine regions and a few examples are from Spain. The technique was probably introduced to Spain through Netherlandish and Middle Rhenish sculptors and craftsmen working there.(13) An excellent example of wax-resin imitation brocade can be found on a triptych which also happens to come from Spain. The Triptych with Saints dates from around 1460 and was painted by an artist known as the Arguís Master. It is

held in the Walters Art Gallery in Baltimore, Maryland. The best preserved imitation brocade is found on the panel showing St. Lawrence (Fig. 165). In two detailed photographs from this panel, the gold design can be seen over deeply incised lines (Figs. 166 and 167). Gold leaf appears to have been applied over a greyish-tan coloured wax and a blue-black paint can be seen to fill in the channels running through the pattern. Parts of the painted image which extend into the brocade background, such as the gridiron, do not appear to have been painted over the wax-resin appliqués.(14) The gold ridges and black painted areas of the design are similar in appearance to the effect achieved in the Münich pasteprint, St. John the Evangelist (S.2850) (Fig. 168).

Not only are imitation brocade appliqués, such as those found on the Spanish triptych, similar to pasteprints in appearance but also in the method of production proposed by Dr. Kistner. The latest research into the production method of imitation brocade was based on a fifteenth century 'recipe book' from an abbey at Tegernsee but now held in the Bayerisches Staatsbibliothek in Münich.(15) The book is a small octavo containing two hundred and fifty pieces of paper written on both sides and titled, Liber illuministarius. It contains various 'recipes' and methods for decoration employed by painters and book illuminators. Some sections of the book are written in Latin, while others are in German. The book was written by several scribes, two of which left written dates of "1503" (on page 206) and "1508" (on page 228).(16) Most of the 'recipes', however, are believed to have originated in the late fifteenth century.

Several attempts have been made to re-create the process of making imitation brocade appliqués. One attempt fol-

lowed a 'recipe' found in the Liber illuministarius.(17) A summary of the 'recipe' reads as follows.

A sheet of tin foil was laid into a matrix and damp hemp was placed over this. The foil was then beaten with a mallet so that it was flush with the matrix surface. A prepared paste was spread over the matrix with a knife, leaving a smooth verso to the sheet and allowing for a very thin layer. The sheet (after drying) was then picked out of the matrix using the tip of a knife and was ready for gilding and painting. Large numbers were made at one time so that they could all be decorated at once.(18) The suggested gilding material was "silver twist", however, real gold leaf was found in several known examples of imitation brocade which appear to have been made from the Tegernsee 'recipe'. Colouring was achieved by using pigments suspended in oil (red, blue, and green) and the finished sheets were attached with either glue, or glue and resin mixtures. This method is illustrated in Diagram B.

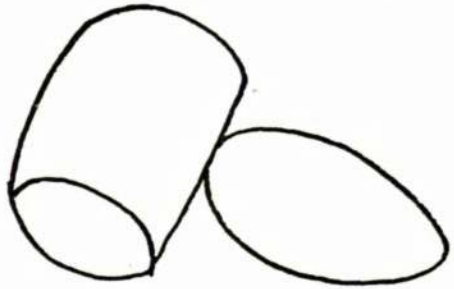
Four known altarpieces dating from between 1466 and 1494 have imitation brocade appliqués which correspond in their materials and layering sequences to the method given in the Tegernsee manuscript.(19) Each has a layer of paste (varying in materials from a wax-resin mixture to a chalk, glue, and resin mixture), then a layer of tin, a layer of ground for gilding, gold leaf, and coloured glazes on top. In two examples, the tin layer has been analyzed as tin oxide (S_nO). This layer appears as a grey-black substance under the microscope.(20) The oxidation of the metallic tin foil is believed to be the result of humid climatic conditions.

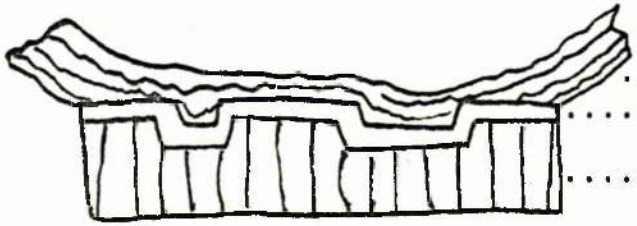
The diagrams of the Kistner method and the Tegernsee manuscript 'recipe' (Diagrams A and B) show a close similarity in

TEGERNSEE MANUSCRIPT

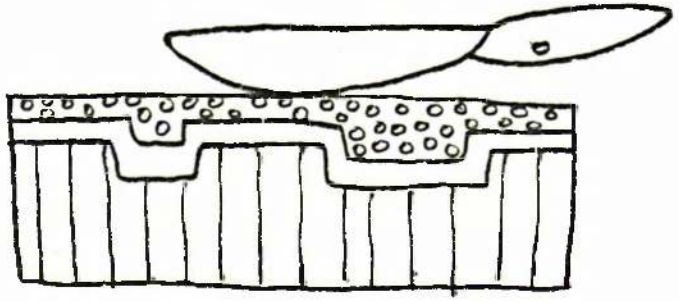
METHOD

1. Hammer tin foil into matrix.

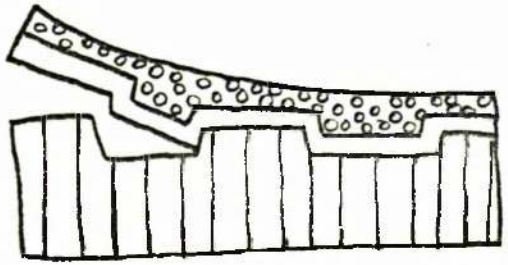




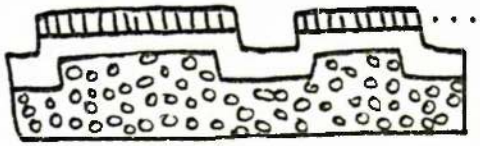
2. Spread paste over matrix with knife.

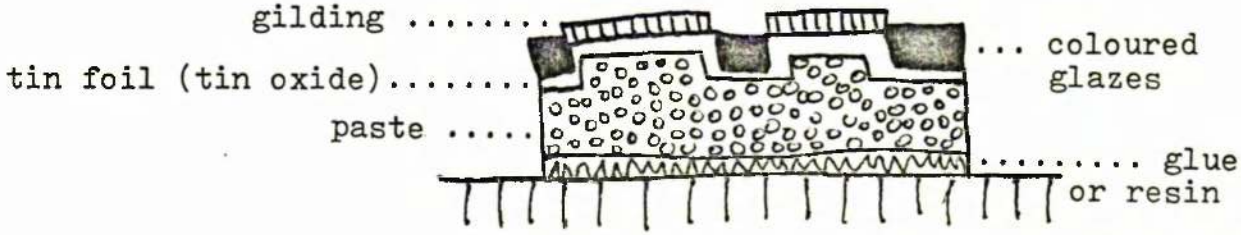


3. Lift out composite.



4. Finishing surface treatment.





(Diagram B)

the layering structure of the final product which is, however, achieved by two different production sequences. The relief areas of the design are in gold with the lower channels in the design coloured in either dark glazes or paint. Both rest on a thicker layer of paste which acts as the form, or body, of the design. Also, both pre-fabricated forms of decoration would have been attached to their final supports using either a resin or glue adhesive. Dr. Kistner does not suggest a material for the matrix used in his proposed method for making pasteprints. In re-creating the Tegernsee method, Dr. Brigitte Hecht used a wood matrix and found that pear or cherry wood made an extremely fine matrix design.(21)

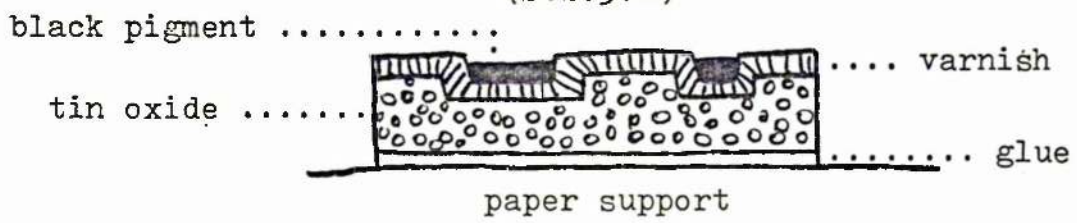
Three pasteprints (S.2825, S.2824c, and S.2850m) in The National Gallery of Art, Washington, D.C., were examined by chemical analysis in 1942. The researchers discovered that all three prints had a layered structure to the surface substance (the paste). Each was adhered to paper with glue, then a greyish-white substance rested above this, the next layer was an orange-brown varnish, and on top of these three layers was a thin coating of a black pigment in an oil medium (Diagram C).

Elizabeth Mongan stated in her article written in 1943, that the greyish-white substance was tin sulphate.(22) However, when Dr. Rutherford J. Gettens, Conservator at the Fogg Museum of Art, first examined the pasteprints he suggested that this layer was tin oxide (SnO). The following paragraph is an excerpt taken from a letter written to Elizabeth Mongan by Dr. Gettens, dated 21 May, 1942:

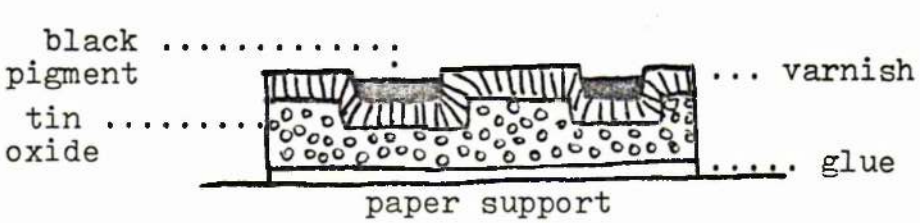
> "It is difficult to explain the tin oxide. I believe it was not applied to the original print in that form but that it is a corrosion product formed on the print from some form of tin or tin compound used originally as a base for the printing. I can only make a couple of guesses

CHEMICAL ANALYSES OF PASTEPRINTS IN 1942

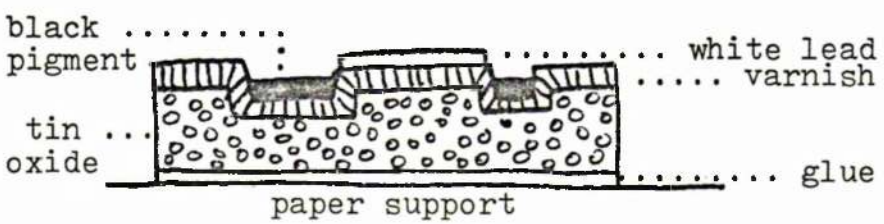
(S.2850m)



(S.2824c)



(S.2825)



(Diagram C)

as to how the tin got there:
(1) Tin foil was laid on top of the paper and the paint was impressed into it. One, however, would hardly expect tin foil to offer a very good surface for printing. The tin foil might have become oxidized in situ to stannic oxide [tin oxide].
(2) It might be derived from yellow stannic sulphide or 'mosaic gold' which was often used as a gold substitute in medieval times. This material is something like a bronzing powder, it may have been used to give an imitation gold background for printing."(23)

An additional analysis by X-ray diffraction indicated, although somewhat weakly, that the substance was indeed tin sulphate and not tin oxide, and this is what was published in the Mongan article.

Looking at the results of the X-ray diffraction analysis made in 1942 on the greyish-white substance, Joyce Plesters of the Scientific Department in The National Gallery, London, questioned the interpretation of these results as tin sulphate. In a letter dated 31 July, 1981, she says that at the time of the Gettens' analysis, that type of research method was in an early stage of development. She goes on to say that:

"Using these modern reference sources [specifically the JCPDS Powder Diffraction File in several large volumes] it can immediately be seen that (a) a rather poor powder pattern has resulted from the sample used in that unusually few lines are listed and (b) of those listed the correspondence is closer to the pattern of stannic oxide [tin oxide] than that of stannic sulphate [tin sulphate]."(24)

She gives a second reason why this material is unlikely to be stannic sulphate (tin sulphate) and that is because it is deliquescent, meaning it takes up water from the atmosphere so that the crystals become wet and ultimately dissolve to a pool of solution. Her conclusion was that, "this would make

it an unlikely material to have been used or to have survived on a paper support for several centuries". Therefore, according to a contemporary scientist's account of the chemical analysis, the greyish-white substance found on the pasteprint surfaces is more likely to be tin oxide, and not tin sulphate.

Dr. Gettens says that the tin oxide is either a corrosion product of tin foil, or is derived from the use of "mosaic gold" an imitation gold substance. With regard to the first suggestion, remember that in two examples of imitation brocade appliqués made from the Tegernsee manuscript 'recipe', a layer within the substance structure was identified as tin oxide. This, along with the close similarities in the layering structure of the two final products (pasteprints and imitation brocade appliqués), implies two analogous methods of production and working materials. If, on the other hand, the tin oxide is derived from the use of "mosaic gold" then another explanation for the appearance of tin oxide must be found.

Pasteprints as imitations of each other.

A 'recipe' for "mosaic gold" is given in the Trattato della pictura by Cennino Cennini (ca. 1400), which describes the substance as a liquid for painting on parchment producing, "a colour similar to gold". It consisted of "sal amoniac", tin, sulfur, and "quicksilver", which was melted in a flask and then tempered with egg-white and gum for application.(25)

Dr. Carl Wehmer suggested that the pasteprints using gold leaf and "silver twist" were imitations of goldsmiths' work in these precious metals.(26) If the three Washington pasteprints were, in fact, made from "mosaic gold" then this

suggests, to me, that the craftsmen who made them intended to imitate other pasteprints made from real gold. It is conceivable that the same fifteenth century market which stimulated the production of numerous woodcut print compositions and religious souvenir items, such as pilgrim-badges, was the impetus for producing various types of pasteprints.(27)

Two pasteprints which by comparison with one another lend credence to this hypothesis are St. John the Evangelist (S.2850) and The Madonna and Child in a Gothic Interior (S.2825) (Figs. 163 and 156). The first print appears to have real gold leaf, or possibly "silver twist", on its surface, though this has not been proven by chemical analysis. The design is created in relief lines in the metal foil, with the additional black colouring added either by hand or in the printing process. The face and hands of the figure were more than likely painted by hand, as were the facial features and details in black. In this pasteprint, we see the use of an expensive, precious metal layer with the addition of time-consuming, hand-painted details.

In the second pasteprint (S.2825), tin oxide forms a large part of the paste structure which, in its original state as "mosaic gold", would have given a golden tone to the impression contrasting with the black pigment which appears on the print surface. This gold and black contrast would have imitated the effect still apparent today in the Münich pasteprint. The white areas of this pasteprint (S.2825) covering the Madonna's face, neck, and hands and the body of the Child, look as though they have been embossed at the same time as the rest of the impression (Fig. 169). A technique for making this type of colour print calls for inking an intaglio plate with soft rollers, in order to lay down each layer of colour on one plate.

The result is that the lowest, or first, colour applied to the plate appears on the surface of the print. A diagram of this technique is shown in Figure 170. In this case (the pasteprint, S.2825), the white pigment would have been applied to the intaglio plate first, so that it would appear on the surface of the print. There are also some pink and green pigments found on the pasteprint which were probably added by hand. The printed details in S.2825 are similar to those made by hand in S.2850, which illustrates a second manner of imitation along with the use of "mosaic gold". These printed details would also have been less time-consuming to produce, and consequently less costly for the buyer.

The proposal that some pasteprints imitate others is an attempt to explain the relationship between two types of pasteprints: those using real materials and hand-production methods and those made from substitute materials using less time-consuming methods, such as printing. Further substantiation of this theory lies in the accumulation of more specific data, i.e., from chemical analyses, from these types of prints and others.

The questions raised in this study centred mainly around the method of production used to make pasteprints, emphasizing the need to substantiate proposals with actual fifteenth century methods. Known 'recipes' from the second half of the century in Northern Europe were used to make several types of surfaces similar in nature to that of pasteprints. It was possible to make not only the layered surface structures but also the unusual relief matrices which would have been necessary to produce the reversed inked impressions, or metalcut prints, which correspond with some pasteprint compositions.

The chemical analysis of three pasteprints in 1942 revealed a layered structure to the paste surface. At least one method proposed since then has suggested a manner of layering different materials together in separate stages, although this proposal was not confirmed in relation to known fifteenth century 'recipes' for similar procedures. These 'recipes' do exist and those presented in this chapter suggest a close technical relationship between the materials and production of pasteprints and imitation brocade appliqués. These pre-fabricated panels also portray a similarity in appearance to some types of pasteprints. Recent attempts to re-create the procedure for making imitation brocade provide relevant material with regard to the types of matrices and process which might have been used to make pasteprints.

Because so many types of pasteprints exist, it will be necessary to have further information from chemical analyses in order to group the prints and organize theories as to why variations occur. With the advances (since 1942) in methods of analysis available to Conservation Departments, a much more exact description of the paste substances will be possible.

This can only result in a better understanding of the original production and appearance of pasteprints.

FOOTNOTES

CHAPTER FIVE

1. J.A. Levenson, K. Oberhuber, J.L. Sheehan, Early Italian Engravings from the National Gallery of Art, (Washington, D.C., 1973), p.529 (Appendix B). Also, Christian von Heusinger, author of, "Ein unbeschriebener Teigdruck in der Zentralbibliothek Zürich," Zeitschrift für schweizerische Archäologie und Kunstgeschichte, XV, (1954/55), pp.241-242, suggested that it was not likely that in the period around 1470 (the proposed period for the production of pasteprints) it would have been technically possible to make a cast matrix which could repeat the fine details of the metal prototype. However, the production of sulfur casts around 1450-70 would seem to negate this assumption and provides a method of reproducing an incised design from an original and also making impressions using the cast as an inked matrix.

2. H. Lehmann-Haupt, Gutenberg and the Master of the Playing Cards, (New Haven, 1966), p.52.

3. C. Wehmer, "Gutenbergs Typographie und die Teigdrucke des Monogrammisten d," Essays in Honour of Victor Scholderer, D.E. Rhodes, ed., (Mainz, 1970). Erwin Kistner suggested that the compositions were reversed when the paste layer was applied to the paper surface. E. Kistner, "Studien an Teigdrucken aus dem Besitz des Germanischen Nationalsmuseums in Nurnberg," Festschrift Eugen Stollreither zum 75. Geburtstag, (Erlangen, 1950).

4. Wehmer, op. cit., p.444.

5. Kistner, op. cit., pp.75-76.

6. A.M. Hind, An Introduction to a History of Woodcut, Vol. 1, (New York, 1963), p.203.

7. T.O. Mabbott, "Pasteprints and Sealprints," Metropolitan Museum Studies, 1932, p.72.

8. B. Hecht, "Betrachtungen über Pressbrokate," Maltechnik-Restauro, Vol. I, (1980), p.48. It should be pointed out that Dr. Hecht does not give the location for either the Bolognese Manuscript or the Marciana Manuscript (meaning a library or institution) and the English translations of 'recipes' from these manuscripts are taken directly from her article where they are given in English.

9. Hecht, op. cit., p.48.

10. M.S. Frinta, "The Use of Wax for Appliqué Relief Brocade on Wooden Statuary," Studies in Conservation, Vol. VIII, No. 4, Nov., (1963), p.136.

11. In a lecture given by Joyce Plesters at the Royal Academy in Edinburgh, Spring 1980, she pointed out a similar

FOOTNOTES: CHAPTER FIVE continued:

instance where a new range of "greens" (meaning pigments) were created in response to the interest in landscape painting aroused by Giorgione's Tempest, thus, suggesting that subject matter greatly influences changes and innovations in art materials and methods used.

12. Frinta, op. cit., p.138.

13. Frinta, op. cit., p.143. This belief is supported by the observance of Northern stylistic traits in art objects made in Spain and also by the popularity of such Northern artists as, Rogier van der Weyden and Hans Memlinc. The type of ground, or gesso, used in the Spanish artworks also suggests a Northern influence, perhaps an artist from the North working with his own materials in Spain.

14. This information was requested, along with photography, from the Conservator at the Walters Art Gallery in July of 1981.

15. Hecht, op. cit., p.27.

16. Ibid.

17. The following re-constructions were based on various approaches to embossing the paste sheets and different mixtures for the paste substance.

Hecht, op. cit., pp.23-24. (Zehetmaier) This method suggested brushing hot wax over a greased matrix. The paste was made from pure beeswax and was found in six different sizes of stamps on an altarpiece from Antwerp (ca. 1480). The design was painted in glazes (black, blue, green, and red) and the gold was applied with a yellow coloured oil. Zehetmaier suggested a lead plate to be engraved for the matrix. The surface was brushed in linseed oil and hot wax brushed over this. After cooling, the wax sheet was lifted off of the matrix and was flexible enough to be applied to a prepared surface immediately.

Three methods suggested rolling out the paste mass.

Hecht, op. cit., p.23. (Brachert) Two different mixtures for the paste were used in this experiment. One, a glue and chalk mixture and the other divided into two wax-based mixtures, one with resin and one pure beeswax. The two wax mixtures were brushed onto a greased lead plate in a thin layer. In this experiment, the sheets were adhered with Venetian turpentine. It was found that the paste could be coloured with lead white or manganese which also acted as drying agents. Either oil or egg-white was used for the gilding, followed by painting. The glue and chalk mixture could be rolled out like pastry dough and impressed with the plate, "wie beim Teigdrucke". Dr. Brachert felt certain that only a metal matrix could have achieved the fine design lines found in known brocade patterns (as imitation appliqués).

Hecht, op. cit., pp.24-25. (Oellermann) Another method utilizing rolled out paste sheets was re-constructed

FOOTNOTES: CHAPTER FIVE continued:

using five different types of paste mixtures: (1) wax, (2) wax-resin, (3) glue and chalk, (4) glue, chalk, and paper fibres, and (5) tin foil, glue, and chalk. The paste consistency in each case was that of putty which could easily be rolled out to 1mm thickness. An impression was then made using a metal matrix greased with oil. Oellermann felt that only a metal matrix could have been used in the original brocade production and based this on the fact that small depressions can be seen at the end of the paste lines, indicating a lump of residual metal left from an engraved line (on the matrix). Oellermann also believed that a wood matrix could not have achieved the fine line quality found in fifteenth century examples of imitation brocade relief. The largest size plate used in this re-construction was 25 x 17 cm, with 14 ridges (in the design) per centemeter.

G. Ognibeni, "Brokatapplikationen auf Wachsbasis," Maltechnik-Restauro, Vol. 87, Jan., (1981), pp.35-37. This last re-construction also entails rolling out the paste mass. The mixture consisted of: 200 grams wax, 50 grams chalk, 70 grams Venetian turpentine, and 10 grams linseed oil. The wax and turpentine was warmed and mixed with the chalk and oil. This was poured into a separate container and left to stand for one or two days. The paste was then kneaded like a pastry dough and rolled out using a wooden pastry roller. The sheet was then placed over the matrix, which was made from stone (slate) and impressed. The edges of the sheet were trimmed with a knife and then the sheet was lifted off of the matrix and allowed to sit one day in order to harden. The decorated sheet was warmed with a hair dryer to make it pliable and could then be applied to a sculpture surface.

18. Hecht, op. cit., p.32.

19. Hecht, op. cit., p.33.

20. Hecht, op. cit., p.32.

21. Hecht, op. cit., pp.44-45. The wood matrix used by Dr. Hecht had up to 18 ridges per centemeter on the surface. These ridges form a major part of the textile 'look' in imitation brocade appliqués. A wood matrix also yielded the thinnest layer of tin foil (she substituted aluminium foil), 0,0076 mm compared to plaster or lead matrices which yielded 0,0114 mm thicknesses. This was, presumably, because the wood matrix could be beaten longer or with more force than either the plaster or lead matrices, thus, producing a thinner layer of foil in the matrix. She experimented with copper matrices but found that a green deposit was left on the brocade surface as a result of resting on the copper metal. She suggested that further experiments using; brass, lead, plaster, and clay, should be pursued; however, she was satisfied with using wood as the matrix material.

22. E. Mongan, "Two Undescribed Fifteenth Century Prints in the Collection of Lessing J. Rosenwald," Art in America, Vol. 31, April, (1943), p.104.

FOOTNOTES: CHAPTER FIVE continued:

23. Copies of the reports and correspondence between Elizabeth Mongan and Dr. Rutherford J. Gettens in 1942 and 1943 were given to me by Dr. Richard S. Field at the Yale University Art Gallery. I am most grateful to him for sharing this information with me.

24. I wrote to Joyce Plesters in the summer of 1981 and received from her some very valuable comments, included in this study, and am most grateful for her consideration.

25. Cennino Cennini, The Craftsman's Handbook, trans. D.V. Thompson, Jr., (New York,, 1960), pp.101-102.

26. Wehmer, op. cit., p.449. A market existed for the production of imitative or "substitute" metals, materials that looked like precious metals, such as gold. C.R. Dodwell made the following comment in his introduction to a translation of De Diversis Artibus (The Various Arts) written by the twelfth century monk and craftsman, Theophilus. "He makes it clear that artistic products will be commissioned and sold, for he mentions the fact that the wealthy will be able to afford pure gold in the books and braided work made for them, whereas the less wealthy will only be able to afford a subsitutue metal to look like it." C.R. Dodwell, The Various Arts, (London, 1961), p.xl.

27. A second suggestion made by Dr. Richard S. Field is that the variation in materials based on a similar production method was the result of localized pasteprint industries. In other words, there was more than likely a number of centres producing pasteprints and this accounts for the variety of prints known today.

CHAPTER FIVE

CATALOGUE

I have limited the entries in the following catalogue to those pasteprints which I have personally examined. In some instances, this includes the observation of layers on the print surface which were seen through a stereomicroscope. This equipment was not available in each case for examination. In only four cases have the paste surfaces been chemically analyzed and in those descriptions a great deal more information was available for inclusion in this catalogue. I have followed a catalogue format because it is the best manner, at this time, for presenting the individual problems arising from the various pasteprints. As more information about each print is accumulated, more definite categories of pasteprints will be established.

The main purpose for including a catalogue of this type with the chapter on pasteprints is to emphasize by description and colour photographs the variety of pasteprints that exist. This variety is at once obvious when comparing different examples by sight but it can be even more astounding when the print surfaces are analyzed and the layered substances identified. The three pasteprints at the Fogg Museum of Art are being studied in the Spring of 1982 by their Conservation Department, which was unaware of these three prints until I asked to see them when visiting the museum on a research trip in April 1981. Other museums and collections might be interested in pursuing detailed research on their pasteprints, also, if they too are made aware of the uniqueness of the prints and the value, with regard to research, of having them properly analyzed.

LIST OF PASTEPRINTS IN CATALOGUE

Fogg Museum of Art

1. Christ Washing The Disciples' Feet, S.2776
2. The Disrobing of Christ, S.2789m (=2804)
3. St. Jerome, S.2851b

British Museum

4. Christ Washing the Disciples' Feet, S.2776
5. St. Dorothy, S.2842

Guildhall, London

6. The Crucifixion, S.2791

Ashmolean Museum, Oxford

7. Madonna and Child in Glory, S.2826m

Staatliche Graphische Sammlung, Münich

8. St. John the Evangelist, S.2850
9. Coronation of the Virgin, S.2828

National Gallery of Art, Washington, D.C.

10. The Holy Trinity, S.2811m
11. The Sudarium, S.2811z
12. Pieta, S.2922b
13. Madonna and Child, S.2826a
14. St. Margaret, S.2854d
15. St. Catherine, S.2837a
16. Unknown Female Saint, S.2861m
17. Unknown Female Saint, S.2861n
18. St. George, S.2845a
19. St. Michael, S.2856
20. St. Catherine, S.2836a
21. St. Francis, S.2843
22. Christ Carrying the Cross, S.[IX. 2788m]
23. St. Catherine, S.[IX. 2837g]
24. St. John the Baptist, S.2850m
25. Madonna and Child, S.2824c
26. The Madonna and Child in a Gothic Interior, S.2825

1. Christ Washing the Disciples' Feet (Fig. 171)

Schreiber 2776
103:74 mm, closely trimmed to paste edge
Fogg Museum of Art

Christ is shown kneeling in the centre of the composition washing the feet of a man seated to His right. Several other figures stand in the background. All of the figures have large circular haloes. A cruciform design is seen in the halo above Christ's head. The composition corresponds with a metalcut print (S.2229). Another impression of this pasteprint is in the British Museum, London (See: entry No.4).

There are no margins to the print as it was trimmed closely and then laid down on its present support. Under a stereomicroscope five layers in the print surface can be seen: paper, size(?), white chalk-like substance, clear orange, black pigment, and a creme coloured pigment. The white substance appears, at first, to be painted on the surface. But it lies beneath the black pigment (Figs. 172 and 173). The overall colouring of this pasteprint is a yellow ochre. There are three holes in the print, one (6 x 2 mm) in the upper right portion and two smaller ones, in the centre and at the left.

Literature.
L.H. Dudley, "Three Paste-Prints," Fogg Art Museum Notes, Vol. II, June, (1926), p.60.

2. The Disrobing of Christ (Fig. 174)

Schreiber 2789m (=2804)
Paper, 146:103 mm; Paste, 104:72 mm
Fogg Museum of Art

The figure of Christ is shown standing in the centre of the composition with Mary and John to the left. Hills are outlined in the background with the faint suggestion of a cityscape. The composition corresponds with an engraving by the fifteenth century printmaker, Master E.S. (Fig. 175). However, the pasteprint is not in reverse to this composition and specific details are different in the pasteprint. It is one of three known impressions, the other two are in Berlin (Preussische Staatsbibliothek) and Münich (Bayerische Staatsbibliothek).

The pasteprint is laid down on the wooden cover of a book bound in red moroccan leather (Fig. 176 and 177). The cover was removed from the book before the pasteprint came into the museum's collection in 1920. The book cover is decorated with small medallion stamped designs (1,6 cm in diameter) depicting the "Lamb of God" inside a double ringed border. Part of a small brass clasp remains in place on the left edge of the cover.* Some script in red and black can be seen along the left edge of the pasteprint, beneath it on the book cover.

In general appearance, the pasteprint has no decorative border and the size or glue beneath the paste does not extend greatly beyond the paste edges. Under a stereomicroscope the following layers are seen: paper, size(?), white chalk-like substance, and black pigment (Figs. 178-180).

Provenance.
Gift of Professor Paul J. Sachs to the Print Department of the Fogg Museum of Art in 1920.

Literature.
L.H. Dudley, "Three Paste-Prints," Fogg Art Museum Notes, Vol. II, June, (1926), p.58.

*Erratum. Photograph shown in reverse (Fig. 176).

3. St. Jerome (Fig. 181)

Schreiber 2851b
Paper, 149:109 mm; Paste, 103:75 mm
Fogg Museum of Art
unique

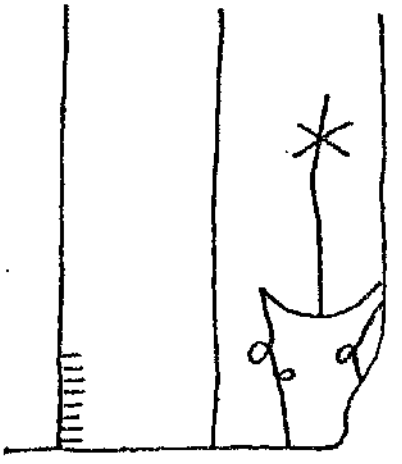
St. Jerome is shown standing beneath a baldacchino holding an open book in his hands with the symbolic lion shown at the left of the saint. The central composition is bordered with a floral motif not unlike that found in S.2776, yet running in the opposite direction.

The pasteprint paper is very interesting. The surface appears to be the mould-side of the paper, making it a distinctly rough surface for printing. The paste seems to have worn along the chain lines in the paper, giving it the appearance of being 'striped'. The bottom and right edges of the sheet may be the deckle edges of the original paper sheet. A very distinct watermark can be seen in the top left corner of the margin surrounding the pasteprint. The motif is that of the Bull's Head with a Star. The paper is laid down on a thin wooden board.

Under a stereomicroscope, the following layers of materials can be seen: paper, size(?), white chalk-like substance, clear orange, black pigment, gold (perhaps gold leaf), white paint. The use of gold (Fig. 182) and the small strokes used to create grass beneath the saint are both similar in technique to the Münich pasteprint, St. John the Evangelist (Fig. 163).

Literature.
L.H. Dudley, "Three Paste-Prints," Fogg Art Museum Notes, Vol. II, June, (1926), p.62.

Watermark.
The closest comparison to this mark is found in: Die Ochsenkopf-Wasserzeichen, Gerhard Piccard, (Stuttgart, 1966), Vol. II, 2, Section VII, fig. 478, p.433. It dates from 1452 in Basel.



4. Christ Washing the Disciples' Feet (Fig. 183)

Schreiber 2776
102:76 mm
British Museum

This is the second known impression of S.2776 (See: entry No.1, Fogg Museum of Art). A floral motif borders this pasteprint. The impression is made from a dark-brown paste adhered to the paper on a grey-brown size(?). The composition corresponds with a metalcut print (S.2229).

5. St. Dorothy (Fig. 184)

Schreiber 2842
100:75 mm
British Museum

The saint stands turned to the right holding a basket in her right hand and a lily with three blossoms in her left hand. The Christ Child stands to the right of her also holding a flower. A palm leaf motif with rosettes in the corners borders the print.

Another impression is held in the Albertina, Vienna. W.L. Schreiber believed that the London impression was from the same plate as the Vienna one, but was not certain.

Provenance.
Jacques Rosenthal, Münich, 1914; auctioned in Dec., 1926 by Sotheby and Co..

6. The Crucifixion (Fig. 185)

Schreiber 2791
175:122 mm
Guildhall, London
unique

The scene in this pasteprint depicts Christ on the Cross with the Good Thief shown on His right and the Bad Thief on His left. The lance held by Longinus is shown piercing the right side of Christ's chest. Beneath Him is the kneeling Magdalene and a group of holy figures with Mary and John standing to the left. The composition is surrounded by an intertwining floral border motif. The pasteprint composition corresponds with an engraving by the Master E.S. (Fig. 186), dating from ca. 1450-60, and a metalcut print (in reverse) (Fig. 162). Curiously enough, the reversed composition in the metalcut print places the incision of the Holy Lance on the left side of Christ's chest, the Bad Thief on His right, and the Good Thief on His left. This irregular order raises the question as to whether, perhaps, the metalcut print was a working copy of the composition which was actually intended to be produced as a pasteprint, in the correct compositional and thematic order.

Dr. A.M. Hind suggested a very specific use for this particular pasteprint. He believed that it was a working proof made by goldsmiths for their designs in enamel. The pasteprint would have enabled the goldsmith to transfer the design to a more precious metal, engrave it, and then enamel it. However, in this instance the transferred design would have been in the wrong thematic order, a factor not taken into consideration by Dr. Hind's proposal. This procedure probably arose from his observation of the paste which he suggested was a type of water soluble jeweler's material, known as "crocus paste", which was used by jewelers to make impressions of their designs.

> "The substance in which the Guildhall Calvary is printed is a brownish paste, like the crocus 'paste' still used by goldsmiths for proving their plates, keeping a record, or for transferring to another plate of different and possibly more precious metal."..."Such crocus, mixed with tallow or gum tragacanth to form the 'paste', is used by goldsmiths in preference to printer's ink as it can more easily be washed out of the lines of the plate with sponge and water. An original reddish tinge (seen in certain samples of pasteprints) might turn in time to a more brownish tone."(1)

Although at first one might doubt the use of "crocus paste", in this instance, it does correlate with a comment found on a sheet of paper accompanying the pasteprint (in its solander box). This refers to the number

of pasteprints that 'melted' when water was used to detach them from the covers of books (or other supports), while others, when removed in a dry state were well preserved. This comment was probably made by Dr. Hind as he wrote a catalogue of the Willshire print collection which was never published (the manuscript is in the possession of the Guildhall).

There are two types of crocus paste: a mineral form and a vegetable form. The former is made from iron oxide which is soluble only in hot concentrated acids.(2) The colour of this paste will vary depending upon how high the temperature was during the burning of the iron oxide (the calcination). One can achieve yellow ochre tones to deep rust reds from the same type of pigment. The vegetable form of crocus paste is made from the autumnal species of the crocus flower (Crocus sativus). The orange-coloured stigmas of a crocus are used as saffron. This is more than likely the type of crocus paste referred to by Dr. Hind as it is water soluble, whereas the mineral form is not. Chemical analysis of the paste on the print surface would prove whether or not Dr. Hind's hypothesis contributes an accurate use and production of this print, adding yet another category to the study of pasteprints.

Provenance.
Willshire Collection, Guildhall, London.

Literature.
1. A.M. Hind, An Introduction to a History of Woodcut, Vol. 1, (New York, 1963), p.199.

2. R.J. Gettens and G.L. Stout, Painting Materials, (New York, 1942), p.122.

7. Madonna and Child in Glory (Fig. 187)

Schreiber 2826m
82:78 mm
ca. 1480
Ashmolean Museum, Oxford
unique

The Madonna is shown holding the Christ Child in her arms. She wears an elaborately decorated robe patterned in cross-hatching and punched work and a crown described by finely pointed curves and flowers. The large halo behind her head is decorated with curving arches. The Christ Child's halo is decorated with a lily motif. Behind both figures is a mandorla emanating outward. Around this is a delicate motif of flowers, vines, and stars.

The colour of this pasteprint is a warm brown with a sheen to both the areas where the paste has worn away and where the paste is still adhered. It is possible that a varnish was applied to the surface sometime after its production, perhaps either to enhance a dull surface or as a means of preserving what was left of the thin paste layer. An unusual feature of this pasteprint is seen in the area around the Madonna's left hand. Here, the lines appear to have been embossed in a clear substance, perhaps the sizing applied beneath the paste layer. It may appear here because of wear on the pasteprint surface. The paste layer on this print is extremely thin which may suggest another production method than that used for pasteprints with heavier surface deposits.

Provenance.
Douce Collection.

8. St. John the Evangelist (Fig. 188)

Schreiber 2850
106:71 mm
Staatliche Graphische Sammlung, Münich

The saint stands in long, pleated robes holding a chalice containing a snake in his left hand and gesturing towards it with his upheld right hand. The landscape is described by short slashes and to the right on a small hill is a tree or bush. The composition has a leaf pattern border with four roses, one in each corner.

W.L. Schreiber made the comment that this impression is covered in gold with black paste. The flesh areas of the figure are painted in white with outlines in black.(1) The image is in very good condition giving a sharp gold and black contrast to the design.

A second impression, though not in as good a condition as this one, is held in the Bayerische Staatsbibliothek in Münich. It is described as a black-brown paste on a dark brown size. This impression was found pasted in a manuscript from Tegernsee (Cod. Lat. 19929), which belonged to a chaplain, Leonhard Stöckel of Prutting.

Literature.
1. W.L. Schreiber, Handbuch der Holz- und Metalschnitte des XV. Jahrhunderts, Vol. VI, (Leipzig, 1926), pp.29-30.

9. Coronation of the Virgin (Fig. 189)

Schreiber 2828
105:73 mm
Staatliche Graphische Sammlung, Münich
unique

In the middle of the foreground the young Virgin kneels, while to either side of her sit God the Father and Christ who place a crown on the Virgin's head. The dove, or Holy Spirit, hovers above the scene. The background is filled in by a tapestry-like design of large diamond shapes. The border is an acanthus leaf pattern with four-leaf flowers in the corners.

The impression is a dark brown paste with gilding on a light brown size. The flesh areas are painted in white. In appearance, this pasteprint resembles S.2850 in its production method (using gold and having details painted in white). It is not, however, in as good a condition as that print. The border around the paste impression is painted in red and blue. It probably dates from ca. 1470. The composition corresponds with a metalcut print (S.2437) which is in reverse (Fig. 190).

The following eight pasteprints (nos. 10.-17.) are now in The National Gallery of Art, Washington, D.C.. They were once pasted along with other prints in a manuscript which was probably written around 1480 at the abbey of St. Peter in Salzburg. They were still in the abbey library when W.L. Schreiber published his Handbuch in 1926.(1) Originally there were four other prints in this group which are now lost. An additional pair of prints (S.2860b and S.2826b) from this group are in the Bayerische Staatsbibliothek in Münich.

Provenance.
Stiftsbibliothek St. Peter, Salzburg; Martin Aufhäuser, Münich; Rosenwald Collection.

Literature.
1. W.L. Schreiber, Handbuch der Holz- und Metalschnitte des XV. Jahrhunderts, Vol. VI, (Leipzig, 1926), p.15. The manuscript reference number is: I.14a.

10. The Holy Trinity (Fig. 191)

Schreiber 2811m
40:32 mm
unique

The impression is in a blackish paste on a red ground. The paper is mounted on wooden board. Along the right edge one can see where the ground or size was dripped in several areas.

11. The Sudarium (Fig. 192)

Schreiber 2811z
39:32 mm
unique

The bearded Face of Christ is shown with a lily nimbus in the centre of this print and appears to be portrayed on a draped cloth. The paste is black on a rusty brown ground and the paper is laid down on a wooden board.

12. Pieta (Fig. 193)

Schreiber 2822b
39:30 mm
unique

The Virgin is shown seated below the Cross holding Christ lengthwise across her lap. The paste appears to be a lacquered black substance on a red-brown ground. The impression is bordered by an orange-red painted outline and the paper is laid down on a wooden support.

The impression corresponds with a metalcut print (S.2472) both more than likely made from the same plate.(1) The metalcut print composition is in reverse.

Literature.
1. H. Bouchot, Les deux cent incunables xylographiques du Département des Estampes, (Paris, 1903), pl. 35, no.70.

13. Madonna and Child (Fig. 194)

Schreiber 2826a
39:31 mm
unique

This impression appears in a dark brown paste over a yellow base. It was once mounted on wood. Under a stereomicroscope the following layers are seen: paper, red-orange (size?), metallic grey, white, and black pigment.

14. St. Margaret (Fig. 195)

Schreiber 2854d
40:29 mm
unique

The crowned saint stands holding in her right hand a short crucifix, which she faces towards a dragon on her left. The impression is in a dark brown paste on a yellow-brown glue base. The whole print is outlined with an orange painted border. Small areas of black and white pigment can be seen on the surface, probably painted on.

15. St. Catherine (Fig. 196)

Schreiber 2837a
40:31 mm
unique

The saint wears a crown and is shown with a halo. She stands on a grassy landscape with a sword resting over her right shoulder and holding a wheel in her left hand. In the background on a summit is a small church. The impression is made in a black paste on a yellow-brown ground and has a painted double line border in orange. It was once mounted on wood, as fragments are still attached to the verso. The white colour on the figure's face and hands may have been painted on.

16. Unknown Female Saint (Fig. 197)

Schreiber 2861m
40:30 mm
unique

A female saint with a crown and shown with a halo stands on a small hill. In the background is a pomegranate design tapestry. She appears to hold in her left hand a small (unrecognizable) symbol. The impression is in a dark brown paste on orange. It is encompassed by a border in orange. There are small areas of white pigment on the face of the figure. The paper was mounted on wood at one time.

17. Unknown Female Saint (Fig. 198)

Schreiber 2861n
38:32 mm
unique

A female saint stands wearing a five pointed crown and shown with a halo. Her arms appear to be outstretched to either side. The symbol in her right hand is totally unrecognizable and she appears to hold a plant in her left hand. The impression is in a black paste on a yellow-brown glue ground. It was mounted on wood at one time.

18. St. George (Fig. 199)

Schreiber 2845a
103:74 mm
ca. 1470
National Gallery of Art, Washington, D.C.

The saint is shown in armour riding to the right and swinging a sword in his right hand over the dragon's head below. A young maiden can be seen kneeling in the upper right corner of the composition. The whole scene is bordered by a flat vine leaf pattern. Two impressions of this scene were once held in the Salzburg Stiftsbibliothek of St. Peter's. This example was pasted in a manuscript dating from ca. 1470. The second example was printed on the same paper as S.2850 and was pasted in a Benedictine devotional book dating from ca. 1474.

The surface colour of this pasteprint is similar to that of S.2776 at the Fogg Museum of Art (a creamy yellow colour). Under a stereomicroscope the following layers are seen: paper, white chalk-like substance (not very thick, size(?), black pigment, cream colour. The orange size layer has deposits of white encrusted around the edges where it is lifting off of the paper surface.

Provenance.
Albertina Vienna; Rosenwald Collection.

19. St. Michael (Fig. 200)

Schreiber 2856
104:72 mm
National Gallery of Art, Washington, D.C.
unique

The archangel Michael stands in full armour wearing a mantle, however, without a helmet or halo. He holds a sword in his right hand above his head and pushes a crucifix into the body of a dragon lying below him on the ground.

The impression is made in a dark brown paste which has fairly straight edges. The stain beneath is a raw umber colour. It extends from the paste edge. There are traces of orange-red paint on the surface. Under a stereomicroscope the following layers are seen: paper, brown resin(?), white, orange, and black. The composition corresponds with an engraving by the Master of the Dutuit Mount of Olives (L.76a).(1)

Provenance.
Maihingen, Oettingen-Wallerstein; Rosenwald Collection.

Literature.
1. M. Lehrs, Geschichte und kritische Katalog des deutschen, niederländischen, und französischen Kupferstichs in XV. Jahrhundert, Vol. III, (Vienna, 1910), p.330.

20. St. Catherine (Fig. 201)

Schreiber 2836a
105:80 mm
National Gallery of Art, Washington, D.C.
unique

The saint stands facing to the left holding a sword and a wheel rests against the sword. She has long, wavy hair, wears a crown, and has a large halo behind her head. The small rectangular format is bordered by a leaf pattern with six foliated rosettes in the corners. The paste is black on a dark red ground with faint traces of silver in the surface. The impression is very well preserved.

The pasteprint is pasted on the inside of the front cover of a Gebetbuch printed in Nürnberg by the Printer of the Rochuslegende (no date) (Hain 75-7*. B.M. II I.A. 8143). Inside of the back cover is a woodcut of St. Eligius. Both prints were well protected by leaves of vellum. The book is now in a modern binding.

At the top of the print is an inscription in fifteenth century manuscript handwriting which reads, "Caterina bit fur mich armen Sundter" ("St. Catherine pray for me, poor transgressor"). Underneath the lower edge of the impression is the name of an owner(?), "C. von dyl".

Provenance.
Baer, Frankfurt, 1899; Sold, March 1902 by Gilhofer and Rauschburg in Vienna; Rosenwald Collection.

21. St. Francis (Fig. 202)

Schreiber 2843
104:74 mm
ca. 1480
National Gallery of Art, Washington, D.C.

The saint, shown with a halo, kneels to the right and receives the stigmata from a crucifix hanging in the top right corner of the scene. To the right sits the monk, Leo, resting on his knees. A book lies on the ground between him and the saint. Behind to the left is a view of the abbey. An arabesque pattern borders the central composition.

The impression is in a black paste on brown. It has been painted in some areas with red and appears to have a varnish on the surface. A green painted border surrounds the print. An example of this impression in the Dresden Staatliches Kupferstichkabinett (pre-WWII) has the crucifix body painted in flesh colours.

Provenance.
Ed. Schultze, Vienna; Albertina, Vienna; Rosenwald Collection.

22. Christ Carrying the Cross (Fig. 203)

Schreiber [IX. 2788m]
109:76 mm
ca. 1480
National Gallery of Art, Washington, D.C.
unique

Christ is shown facing to the right bent under the strain of carrying the Cross on His procession to Calvary. Several figures can be seen in the background, four or five of which have haloes similar to that shown above Christ's head. The rectangular format of the scene is encompassed by a vine pattern.

The blackish paste appears to have a shiny, perhaps lacquered surface and the paste borders are fairly straight. There is a contemporary inscription at the top of the impression.

Provenance.
Franz Trau, Vienna; Martin Aufhäuser, Münich; Rosenwald Collection.

23. St. Catherine (Fig. 204)

Schreiber [IX. 2837g]
51:39 mm
National Gallery of Art, Washington, D.C.
unique

The female saint stands facing to the left. She wears a crown, has a large simple halo, and appears to hold a long sword in her right hand. The print was found on the verso of a metalcut print dating from ca. 1460-70 (S.[IX. 2754m]), which shows the letters "IHS" in the centre of a flaming aureole. The metalcut print was pasted onto the inside cover of a book, however, before being laid down the pasteprint of St. Catherine was adhered to the glue covered verso of the metalcut print. The reason for this is unknown. The discovery of the pasteprint was made and documented by Elizabeth Mongan.(1) A curious feature of this pasteprint is that the image of St. Catherine looks more like a metalcut than a pasteprint because it is a positive image with the most important lines in white (as in a metalcut) and not in black (as in a pasteprint).

The following information comes from an analysis and report made by Dr. Rutherford J. Gettens at the Fogg Museum of Art in 1942 for Elizabeth Mongan (See: previous section, "Imitation brocade appliqués").

The first layer of material was a greyish-white colour. This layer, which is the thickest of the other three layers, was identified as tin oxide. Its appearance indicated that it was not applied as tin oxide but was a corrosion product directly from metallic tin or from some tin compound. The material was crusty and very brittle. It was not soluble in water. The next layer identified was a yellow-orange, clear substance. This appeared to be the thinnest layer of all four. It was found between the tin oxide layer and the upper black layer. Examination indicated that it was a clear resin or varnish film and that it contained no pigment. The third layer was a black carbon pigment mixed in a soft resin medium. This was very brittle and also insoluble in water. There was no indication that this substance was bitumen. The last layer was that which acted as the adhesive for the pasteprint on the verso of the metalcut print. It was probably a type of vegetable glue or gum. This analysis correlates with the description of the three other pasteprints analyzed in 1942 (S.2825, S.2824c, and S.2850m).

Provenance.
Metalcut print purchased from A.S.W. Rosenbach of Philadelphia in 1930; Rosenwald Collection.

Literature.
1. E.Mongan,"Two Undescribed Fifteenth Century Prints in the Collection of Lessing J. Rosenwald," Art in America, Vol. 31, April, (1943).

24. St. John the Baptist (Fig. 205)

Schreiber 2850m
104:75 mm
National Gallery of Art, Washington, D.C.
unique

The bearded saint stands to the left of the scene gesturing to his left hand and the Gospel. The Lamb of God and Cross appear in the background. An acanthus leaf pattern borders the impression. It was originally printed on the same paper as the St. George pasteprint (Fig. 199) and found in a manuscript.

This pasteprint and three others (S.[IX. 2837g], S.2824c, and S.2825) have similar layered structures and all contain the same tin compound which is now thought to have been tin oxide. In this impression, the background of the print is black and the figure, which is not clear, is in brown. The paste covering the paper surface is fairly thick. Directly beneath the black substance is a white under-film. A light brown film can be seen in areas between patches of black. The layered sequence of materials is described as follows.

The support is a sheet of paper which is adhered to two lower layers of different paper. These lower layers may have been part of a cover of a book. The size, or adhesive, layer is a brown stain-like pellicular film that covers the paper thoroughly and is seen between the dots and lines of the figure and background. It penetrates into the paper fibres. Specific properties of this substance suggested that it is a vegetable gum and not an animal glue. The third layer was a greyish-white substance which was opaque, dense, and highly refractive. It is now identified as tin oxide. There was no evidence of a separate organic binder in this substance. The fourth layer appeared to be a resin or varnish. It was orange-brown, thin, semi-transparent, and appeared between the greyish-white layer and the black layer. In much of the region of the central figure the orange-brown substance was the surface layer. In the same area, however, many of the lines and dots are in dark brown at the surface and the dark brown does not seem to be a separate layer but is rather the result of local darkening of the orange-brown pellicle. The upper layer was a black pigment identified as lamp black. It was especially thin in the background of the scene. It probably had a soft resin binder, although this was not identified.

Provenance.
Stiftsbibliothek St. Peter, Salzburg; Rosenwald Collection.

25. Madonna and Child (Fig. 206)

Schreiber 2824c
Paper, 107:155 mm; Paste, 100:72 mm
National Gallery of Art, Washington, D.C.
unique

The Virgin is shown standing in the centre of a rectangular format holding the Christ Child in her left arm. She has loose, flowing hair and is dressed in robes decorated in parallel hatching. Both figures are shown with haloes, the Virgin's is filled in with radiating lines from her head and the Child's in a type of lily motif. The composition is bordered by a pattern of swirling vines alternating in direction. The border is not complete in its printing. Two large holes can be seen in the left margin of the print and the inscription, "T.(?).III.24.N.285", is located at the lower left corner of the paste impression. A fragment of the watermark Bull's Head with Crown is seen in the paper.

The general tone of this pasteprint is reddish-brown and the lines of the figure are faint and obscure. There is some black colouring especially in the area of the background. Under low magnification, the lines are seen to be made up of a series of raised dots which, in turn, are built up in layers. The entire print is speckled with orange-red particles. The following information is taken from the Gettens' report (1942).

The support is a single layer of paper. It appears to have been attached to a book cover or other paper support at one time. The sheet is pierced with several small round holes, apparently worm-holes. On the left side there are two larger holes with brown stained edges. Exposed paper between the dotted lines in the design show the size, or adhesive, layer, a thin brownish transparent film speckled with red pigment. This last substance penetrates into the paper fibres. The darkening of this layer has perhaps caused the general degradation of the tone of this print. This film is entirely similar in appearance and properties to the size layer observed in the St. John the Baptist pasteprint (S.2850m)(Fig. 205). It is probably a vegetable gum, perhaps gum arabic. Particles of red lead pigment are embedded in this layer.

The third layer is similar to that found in pasteprints S.2850m and S.2825. It is a white opaque substance now identified as tin oxide. The fourth layer lies directly over the white opaque layer. It is an orange-brown colour and gives a strong indication of being a resin. In certain areas of the print, this layer contains scattered orange-red particles which apparently are identical with the red lead found in the brown adhesive layer. There is evidence that some of the red lead has changed to brown lead dioxide. It should be noted that the

structure of the lines in the central figure is confused and irregular. It is difficult to tell how the structure was laid down originally because it is suspected that some chemical alteration has occurred. Changes in the original colour of the pasteprint are also very likely. These situations must be taken into account when proposing answers as to what a pasteprint was originally intended to look like and in suggesting methods of production. The final layer on this pasteprint is a layer of black on the surface of the impression. Underlying the black are the same orange-brown and white opaque layers observed in both the central figure and in the background. The black pigment is lamp black.

The description of this pasteprint provides two important comments with regard to the comparison of other prints. First, it is very likely that chemical changes have distorted the appearance of the pasteprint compared to its original appearance. Second, this information proves the importance of chemical analysis in providing a system for catagorizing pasteprints accurately according to the chemical materials in the layers.

Provenance.
C.G. Boerner, Leipzig, Cat. 157, May 7, 1928, no.50; Weiss and Co., Münich; Martin Aufhäuser, Münich; Rosenwald Collection.

26. The Madonna and Child in a Gothic Interior (Fig. 156)

Schreiber 2825
74:45 mm, closely trimmed
National Gallery of Art, Washington, D.C.

The Madonna is shown standing in what appears to be a Gothic chapel. She holds the Christ Child in her right arm. She has no halo but wears a crown decorated with trefoil motifs. The Child's halo is filled in with a lily motif. Above the figures is one complete arch flanked by two half-arches under which can be seen a pattern suggesting stained glass windows. The illusion of receeding space in the background is suggested by diagonal lines that run outward from behind the two figures. The composition corresponds with a metalcut print (S.2492x) which is in reverse (Fig. 157). This print is bordered by a large vine and flower pattern. This border can be seen on two additional impressions of this pasteprint, one in the Berlin Kupferstichkabinett and the other in the Museum für Kunst und Industrie, Vienna.

This is the last pasteprint analyzed by Dr. Gettens in 1942. The print is very well preserved, although somewhat different in appearance from the other three prints. The lines of the impression are black consistently over the entire surface, except for those in the Madonna's face and those outlining the Christ Child. These are white with patches of pink. The dotted pattern seen behind the Madonna shows bits of green pigment. The exposed paper between the lines of printing is light brown in colour.

The support for the pasteprint is a single layer of heavy paper similar to a light cardboard. The verso appears as though it had never been pasted down to another surface. The size layer was applied directly to the surface of the paper and can be seen between the printed lines. It is not as dark in colour as the corresponding layer in the prints, S.2824c and S.2850m. This thin film material, which penetrates into the paper fibres, is soluble in water and is probably a vegetable gum. Scattered particles of an orange-red pigment identified as red lead are throughout the layer. The third layer is white and opaque. It corresponds with the tin oxide material found in the previous three pasteprints.

The fourth layer occurred in most of the printed lines between the white opaque layer and the black surface layer. This orange-brown medium is definitely resinous in character. The layer contains scattered orange-red particles recognized as red lead. The surface black substance is lamp black bound by an oil or varnish medium. As noted above, this layer is covered in some areas by an additional layer of white. It is 'whiter' than the tin oxide layer and was identified as white lead (basic lead carbonate). The pinkish areas seen here

contain some red lead pigment. The green colour seen in the background gave a positive test for copper. Since the medium of the layer is varnish-like, it appears that the green is copper resinate which so frequently occurs in paintings of this period (second half of the fifteenth century).

Provenance.
Jacopo Artaria, April, 1817, Mannheim; Collection Oettingen-Wallerstien, Maihingen; Martin Aufhäuser, Münich; Rosenwald Collection.

CHAPTER SIX

SEALPASTEPRINTS.

The three objects termed "scalpasteprint" were thought to be a combination of the sealprint and pasteprint techniques. They were discussed by Dr. T.O. Mabbott in an article in 1932 and one particular print, The Madonna and Child Enthroned (S.2824b), was included in an article published in 1928.(1) Dr. Mabbott attempted to organize the three sealpasteprints into what he believed was a developing technique using a white paste substance in larger amounts on consecutively larger areas of paper. One limitation in his approach was that it was not within his means to be specific about the type of "paste" used in each print. Had he possessed the technical knowledge available through today's chemical analysis procedures, he could have been more specific as to the make-up of the paste substances resulting in more conclusive research. Also, he did not pursue historical comparisons with objects of a similar nature, both in appearance and in production methods.

Technical analyses should certainly be performed on these three prints. In the meantime, the material presented in this study pursues aspects about the prints which have not previously come to light. These include relating them to similar objects made in the fifteenth century, both by stylistic analyses and in production method and material.

The Madonna and Child Enthroned with Four Saints
S.*2828m
205:153 mm
Northern Italian, ca. 1450-1500
Metropolitan Museum of Art, New York

The composition of this sealpasteprint shows the Madonna seated on a throne holding the Christ Child on her right knee (Fig. 207). The Child is standing with His arms held out and His right hand raised in the gesture of benediction. All of the figures, except the Child, which has a cross motif, have simple semi-circular nimbuses filled in with finely cross-hatched lines in relief. This same decorative treatment has been applied to the relief outlines seen around the throne, the architectural frame, and the border of the composition.

The Madonna is not crowned but wears a mantle draped over her head and shoulders. This, along with the positioning of the Child and the cross motif in the Child's nimbus, harkens back to an earlier figural prototype showing the Madonna and Child Enthroned in a characteristically Byzantine style (Fig. 208). This example is dated from the second half of the twelfth century and is portrayed in a fresco located at St. Celso, Milan.(2)

To either side of the Madonna and Child, in the sealpasteprint, are saints depicted standing in full-length. Starting on the left, the figure of St. Anthony is shown dressed in a monk's habit. He carries a bell and a book in his right hand and a staff in his left hand. The tau cross is shown on the front of his robe. Next, is a bearded saint, possibly St. James the Lesser. As a pilgrim saint, he carries a staff in one hand and wears a wallet, or scrip, sus-

pended from a loose belt to the left. He too, carries a book in his left hand. In the centre is the Madonna and Child. Continuing to the right is the figure of St. Catherine. She is shown crowned and carrying her attributes, the wheel and palm branch. St. Ambrose is the fourth saint depicted, wearing a mitre and carrying a crozier and book. All of the saints wear long, flowing robes draped over the figures in a graceful, curvilinear manner. They are shown in diminished size when compared to that of the seated Madonna and Child.

The style of this sealpasteprint was noted by previous authors as having distinctly Italianate features.(3) It has already been pointed out that the representation of the Madonna and Child shown in this composition is similar to the Byzantine prototypes which later influenced altarpiece compositions in twelfth and thirteenth century Tuscany.(4) The Madonna and Child enthroned with pairs of saints standing to either side is a theme and arrangement seen in polyptych altarpieces made in late Gothic Tuscany.(5) An example is seen in a polyptych by Andrea di Guisto, made around 1435, which shows the Madonna and Child Enthroned With Sts. Bartholomew, John the Baptist, Benedict, and Catherine (Fig. 209). Both the sealpasteprint and the polyptych show the figures of the saints in a diminished size compared with that of the central images, the Madonna and Child.

The group of figures in the sealpasteprint is shown placed beneath a series of divided arches, which underly one large arch covering all six figures. The sectioning of one large arch into three smaller segments is shown in works from the early fourteenth and fifteenth centuries made in

Tuscany.(6) A polyptych by Simone Martini, dated 1320, shows the main arch above each figure divided into three (Fig. 210). The three inner arches are distinctly pronounced and display an obvious correspondence with the pattern shown in the sealpasteprint.

These comparisons suggest a ~~Northern~~ Central Italian origin for the sealpasteprint The Madonna and Child Enthroned with Four Saints. The grouping of the Madonna and Child with saints was a popular theme in fourteenth and fifteenth century Tuscany. In addition to this, polyptychs from Northern Italy display the 'segmented arches' seen in the sealpasteprint composition.

Method of production and use.

The sealpasteprint, itself, is extremely light-weight. The paste is adhered to a paper support with no evidence of a glue base and the paper is permanently attached to an old wooden frame, not contemporary with the image. The edges of the paper support can be seen quite clearly along the left side of the composition. Also, in several areas the paste has broken away from the paper exposing cross-sections of the paste substance. The paste relief may have been applied to the paper in the same manner as papier mâché relief appliqués were attached to the lids of boxes (while they were still damp). The paste consists of long, brittle and twisted bunches of yellow ochre fibres. This may possibly be straw, or a similar vegetable fibre. In the lower right corner, a small feather can be seen in the paste relief. This kind of "foreign matter" contributes to the coarseness of the paste mixture. The surface is coloured in a dark

brown pigment, probably containing some varnish, as the surface has a sheen to it. Where sections have chipped off, the underlying colour is a shade lighter but where the whole section has broken away, the yellow ochre colour is seen. In other words, the dark brown colouring does not penetrate the whole thickness of the paste surface. The general character of the paste is that of a crude, rough mixture, perhaps made from a pulp consisting of macerated straw and sizing. The relief areas are solid and not concave on the verso and the surface is extremely hard and sturdy.

The "Madonna and Child" was a popular theme for Marian cults in Italy and Northern Europe during the fifteenth century. The figures were often represented either in partial relief or with both figures in full, low-relief. An early example, made in the second half of the thirteenth century, with relief areas of the design in gesso (?), is a fragment from an altarpiece, known as the Madonna dagli occhi grossi (Fig. 211). This image was carried in a procession (during the thirteenth century) beneath a baldachin to the cathedral in Siena.(7)

A later version of the Madonna and Child, in a smaller, rectangular format, was made during the fifteenth century in Lombardy. The relief in painted and gilded papier mâché measures 55,9 x 44,5 cm (Fig. 212). The cloak of the Madonna is blue with her dress and the beads hanging from above coloured red. The frame and composition were moulded in one piece. Three other versions of this design, in terracotta, differ only in the form of the frame and pattern along the lower border.(8) Another low-relief plaque of the Madonna and Child from the Florentine School (second half of the fifteenth century) is also made from papier mâché and exists

in duplicate versions, in other media such as, painted plaster, marble, alabaster, and terracotta (Fig. 213).(9)

The Metropolitan sealpasteprint was thought to be an imitation of carved wood or hand-tooled leather because of its dark brown colour. However, the slight sheen to the surface indicates, to me, that it was more likely intended to imitate a low-relief plaque made in bronze, with its rich, dark brown tone and glossy surface. The similarities between the two media can be seen in Figures 214 and 215 , both Italian from the fifteenth century. Papier mâché was an inexpensive substitute for materials, such as, wood, leather, and metal, and the process of moulding papier mâché was less time-consuming than, say, casting bronze reliefs. The subject matter of the sealpasteprint and the somewhat conventionalized portrayal of the figures suggests that it could possibly have been intended as an inexpensive devotional object, perhaps associated with a Marian shrine in Northern Italy in the second half of the fifteenth century.

The Madonna and Child Enthroned
S.2824b
85:65 mm
Southern Germany (?), ca. 1450-1500
National Gallery of Art, Washington, D.C.

This sealpasteprint is quite different from the one previously discussed. To begin with, it is less than half the size of the Metropolitan example. Also, it was made from a thinner layer of paste adhered to a sheet of paper and appears to be in a worse state of preservation than the previous sealpasteprint (Fig. 216).(10) The figural style is that of a Northern school, probably German.

The lines of the composition are raised in relief on the surface. The whitish paste, which has been painted in a brown varnish, is adhered to the paper support with a layer of glue. A painted border in red surrounds the relief. The "paste" on this sealpasteprint is almost twice as thick as that found on most types of pasteprints. The result is an image which is very similar to that made from a seal on wax.

The composition of this print portrays the Madonna seated with the Christ Child in her arms beneath an arch with two adjoining towers. She wears a cloak, the borders of which are decorated with hatched lines and a crown with three distinct points. Each figure has a simple semi-circular nimbus behind the head. Most of the scene is described in a fairly simple manner, without superfluous descriptive detail. The border is made from a series of doubled square dentels. The paste area of the print has a border which was painted in

bright vermilion, a treatment reminischent of that given to manuscript illuminations. A detailed description of the scene is difficult to manage due to the unevenness and cracking throughout the paste surface.

In his description of the print, Dr. T.O. Mabbott said that through the cracks in the paste he could see a white substance with brown colouring as a distinct layer on top. In two places the vermilion border covers the brown paint, indicating that the brown colouring was added before the border.(11) There is no evidence that the print was pasted into a book, or manuscript, as so many fifteenth century prints and pasteprints were. However, on the verso there is a hand-written inscriptions which reads: "Ad Ecclesiam in Burgrai(n)..". The last letter in "Burgrai(n?)" was cut off and the "m" in "Ecclesiam" was damaged from trimming. It was suggested that the print belonged to a church in the village of Burgrain in Bavaria, west of Münich.(12)

Very little further information can be deduced from the photograph and description, by Dr. Mabbott, of this seal-pasteprint. It was obviously made by using a matrix, probably metal, on a paste which would adhere to the paper support with the means of an adhesive. In production method and materials, it would seem to be more closely related to the production of pasteprints and not to the low-reliefs made from papier mâché, previously discussed.

The Martyrdom of St. Catherine
S.2863
Inscription, 140 mm diameter; Engraving, 87 mm diameter
Germany, ca. 1475-1500
Danzig State Library

The only part of this sealpasteprint consisting of a paste substance is the border around the central composition, an attached engraving (Fig. 217). The border inscription (partially destroyed) is a devotional supplication which reads:

"auf: roter: munt: mein: herez: dir: lif: unt: tu: dasz: schir: de"...

This was translated as, "red mouth, my heart has run to thee and do that quickly..".(13) The engraving depicts The Martyrdom of St. Catherine. The saint is shown kneeling in prayer with her eyes closed. An aura made from finely hatched lines emanates around her head. Behind her and to the left, stands the horrific machine, made from wheels with spikes and blades, ordered by Emperor Maximian for her execution. However, the miraculous intercession of a burst of flames from heaven destroyed the device and the emperor ordered the beheading of the saint instead. In this scene, the executioner stands poised, ready to decapitate his victim.

No attempt was previously made to identify the artist of this engraving. Several stylistic factors would suggest that the artist was strongly influenced by the late fifteenth century printmaker, Israhel van Meckenem. The treatment of the saint's nimbus, as fine lines darting outward from

behind her head, have a similar quality to those seen in the engraving, The Holy Family (Fig. 218). Here, behind the dove and the head of the Christ Child, one sees the same type of motif. In another print by van Meckenem, The Betrayal, similar facial features and costumes, as those seen in the Martyrdom of St. Catherine print, can be found (Fig. 219). These are first seen in the figure standing with a raised fist directly to the right and behind Judas, and in the prostrate figure of Malchus shown in the foreground beneath St. Peter. The faces of these two figures and that of the executioner in the martyrdom scene all have extremely coarse features with high cheek bones and, perhaps most obvious of all, large, snout-like noses. These features intensify the grotesque nature of their characters. The figure of Malchus wears a loosely gathered tunic, albeit with sleeves, along with baggy leather boots, an outfit not dissimilar to that worn by the executioner in the martyrdom print. The engraving of The Martyrdom of St. Catherine is portrayed in a more forceful style than that seen in the two van Meckenem prints. That is, there is less superficial detail and a more rugged definition of the figures, their garments, and the elaborately designed "torture machine" shown to the left.

It would seem that the artist of the Danzig engraving was influenced by van Meckenem and might even have been the master himself. He was an extremely prolific engraver, making over 620 known engravings and was, no doubt, extremely influential on the styles and compositions of other artists and engravers in the last quarter of the fifteenth century. The sealpasteprint was found in a manuscript, Glossa ad librum sapientiae, which belonged to a Dr. Holkot and was dated 1458.(14) However, this date in the manuscript is of little

value in assigning an approximate date to the engraving. According to its correspondence with the van Meckenem prints, the engraving must date from at least 1475-80.

Dr. Mabbott suggested that a metal matrix was used for impressing the border inscription on the Danzig sealpasteprint.(15) The paste substance was, in his words, "neither metallic nor waxen".(16) It may be that the paste was a paper pulp, such as that discussed in the preceeding chapter (Chapter Four). From the photograph, one can vaguely make out the laid lines of the paper support in the lower right corner. This would indicate that the impression was made and applied to a sheet of paper, the same process as that used in the production of small paper reliefs. The surface quality of the lettering is similar to that seen in The Virgin Crowned by the Trinity papier mâché relief from Wienhausen (Fig. 148). However, in that instance, the borders were made from cut out strips of paper applied to the edges of the papier mâché relief and not in the reverse order; the relief applied to the sheet of paper. Only a limited amount can be surmised from the photograph with regard to the production method and construction of the sealpasteprint. Any further, more conclusive information would have to be obtained by examining the print at first hand.

It is evident, from the preceeding discussion, that these three sealpasteprints were made from three distinct methods of production and need not, as Dr. Mabbott suggested, have been made in a specific order of experimentation with a paste substance on paper. The Danzig print and the Metropolitan print have distinct similarities in production methods to that of papier mâché reliefs and have little to do with the production of pasteprints. However, the National Gallery

print may represent a "type" of pasteprint, which utilized an extremely thick paste instead of the usual paint-like thickness. It would be very helpful to have chemical analyses of each sealpasteprint, in order to place them more accurately in their appropriate category of art production. Without this information, one can only speculate from visual analysis as to what the paste is made of and how it was applied to the paper surface. It would not be inaccurate to conclude that each sealpasteprint represents an independent example of a production method, which must have been current in fifteenth century Germany and Italy.

FOOTNOTES

CHAPTER SIX

1. T.O. Mabbott, "Seal-prints and a Seal-paste-print of the Fifteenth Century," Bulletin of the New York Public Library, Vol. 32, (1928), pp.511-519.

2. H. Hager, Die Anfänge des Italienischen Altarbildes, Untersuchungen zur Entstehungsgeschichte des toskanischen Hochaltarretabels, (München, 1962), p.26, Fig. 21.

3. T.O. Mabbott, "Pasteprints and Sealprints," Metropolitan Museum Studies, 1932, p.62. Dr. Mabbott suggested that the "Italian look" of the sealpasteprint (Metropolitan) was due to having followed an Italian model in production.

4. Hager, op. cit., pp.23-32.

5. R. van Marle, The Development of the Italian Schools of Painting, Vol. 9, "Late Gothic Painting in Tuscany", (The Hague, 1927). Further examples are: "The Madonna and Child with Saints," Mariotto di Nardo, Tuscany, ca. 1400-25, Fig. 141; and "The Madonna and Child with Saints," Sano di Pietro, Tuscany, ca. 1450, Fig. 307.

6. Further examples are: a triptych showing "The Madonna and Child with Saints," Giovanni di Paolo, Siena, ca. 1400-25, (van Marle, Fig. 249); and a dossale showing "The Madonna and Child with Saints," Deodato di Orlandi, Pisa, 1301, (Hager, Fig. 156).

7. Hager, op. cit., p.26.

8. J. Pope-Hennessy, Catalogue of Italian Sculpture in the Victoria and Albert Museum, Vol. 1, "8th-15th centuries," (London, 1964), pp.382-383.

9. F. de la Moureyre-Gavoty, Sculpture Italienne, Musée Jacquemart-André, (Paris,1975), pp.35-36.

10. Unfortunately this print was not yet in The National Gallery collection when I was in Washington, D.C., (April 1981) and I was, therefore, unable to examine it first hand. The descriptions used in this text are derived largely from those given in the Mabbott article (1928), op. cit., pp.517-519.

11. Mabbott (1928), op. cit., p.518.

12. Mabbott (1928), op. cit., p.519.

13. Mabbott (1932), op. cit., p.60.

14. W.L. Schreiber, Manuel de l'Amateur de la Gravure sur Bois et sur Métal au XVe siecle, Vol. 3, (Berlin, 1893), p.229.

15. Mabbott (1932), op. cit., p.60.

16. Ibid.

APPENDICES

APPENDIX A.

PAPER: ITS HISTORY, PRODUCTION, AND APPRECIATION WITH REGARD TO FIFTEENTH CENTURY PRINTS.

In looking at the history of early papermaking in Europe, it is perhaps less important to point out where paper was first used than it is to point out and discuss the situations in which paper was first made and marketed, and the social and economic conditions which caused an interest in paper and papermaking. In China, papermaking was discovered during a period of cultural activity with a great interest in literature and the arts. The new papermaking method was suited to producing a variety of papers which served many functions. When social values shifted and religion was given greater importance, paper was put to use promoting religious images and charms sanctified in Buddhist temples. In a similar sense, paper was used to arouse fervour and to meet the needs of Christian devotional practises during the fourteenth and fifteenth centuries in Northern Europe.

Papermaking technology was introduced to Europe through European encounters with Arab sources, either as Crusaders or with Arabs living in towns on the Italian coast. The Italians developed a way of making better paper, improving on the Arabian technique. They made their paper from hemp and/or linen materials and sized it with animal gelatine. They used wire moulds and introduced the use of watermarks as a system of identifying papermakers and various types of paper.

An "industrial revolution" in medieval Europe gave rise to the use of natural energy sources, such as, wind-power

and water-power. The use of water-power by the Italians for making paper utilized an energy source that was both free and incessant. This helped in producing more paper than the Arabs and contributed to the consequent control of the paper market by the Italians.

Economic and social factors influenced the types and quantities of paper made in late medieval Europe. The introduction of papermaking mills encroached upon established parchment and vellum industries. We know that early papermakers tried to produce paper that had the surface characteristics and the permanence of parchment, in an attempt both to compete with these industries and to convince a suspicious public to use this new material. But the impetus to develop and expand did not come until paper was required in large quantities. The Church was very important in this respect and religious beliefs, such as, "the cult of saints", also helped to establish the need for paper in sizeable amounts. Organizations, such as, the Windesheim Congregation and the Brotherhood of the Common Life, which produced much of the cheap written material in the years before movable cast type, helped to promote the use of paper as a less expensive writing material.

Fabriano was the first town in Italy to have an established paper industry. The records of one particular Fabrianese paper merchant provide an invaluable source of information about amounts and types of paper made and destinations for paper shipments from Italy. The first German papermaker, in Nürnberg, kept a diary of his experiences with this new industry. He began by employing two knowledgeable, if not somewhat unruly, Italian craftsmen and later added to the number of workmen at his mill by contracting local Germans

on a yearly basis.

Making paper is an involved process which begins with selecting the raw materials that will make the best paper. These must be thoroughly cleaned and broken down into a liquid pulp. Innovations, such as, the "Hollander Beater" in the seventeenth century, have made this process an easier and faster one resulting in new types of paper. Making a sheet of paper by hand involves a great deal of control and can be thought of as a skill learned through repeated trial-and-error experience. The final drying and sizing of paper has as much of an effect on the quality of the paper as the earlier stages of its production. The finishing treatment given to the paper surface can vary depending upon its ultimate use.

Even the oldest paper from Fabriano shows the characteristic "chain" and "laid" lines. Understanding the process of papermaking helps to explain features that appear both in and on the surface of a sheet of paper. The study of watermarks, especially as developed by Allan Stevenson, has the potential of yielding valuable dating information. The earliest marks are probably the trademarks of individual craftsmen or paper-mills. Some watermarks display a fascinating series of changes, or "states", which indicate the use of one pair of moulds over a specific period of time. Over 7000 watermarks are recorded in one modern publication covering the period between the thirteenth and fourteenth centuries.(1)

All of this information should be of interest to the historian of prints, whether the period is fifteenth or twentieth century. Every stage in the historical development of papermaking technology and each stage in the production of a sheet of paper is ultimately reflected in the paper itself.

A printed image on paper is only partially appreciated if a knowledge of the process and history of papermaking is not also duly understood.

The "discovery" of papermaking in China.

Surfaces for writing or painting on, other than paper, existed before the invention of papermaking in China. Papyrus was one such material grown and used in Egypt. It was made by a process of lamenation in which the plant stalks are sliced from end to end, then pasted together much in the same manner as laminated wood.(2) Polynesian societies in the south Pacific used the bark of the paper-mulberry tree for making a material known as, "tapas". This was utilized both for artists' materials and more utilitarian items, such as, clothing and floor mats. The Maya and Aztec Indians of North America made a paper-like substance by beating the bark of fig and mulberry trees and before papermaking technology was discovered in China, artists there used bamboo sheets and pure silk to draw and write on.(3)

But these materials remained unvaried and simple, bound to the basic technology used to produce them. It was not until the oriental papermaking technique was discovered, i.e., macerating pulp and re-forming it on a screen, that a variety was possible in the raw materials used and the kinds of paper that could be made. The earlier writing materials described above were limited to having one kind of surface, were made from one raw material, and were the result of a simple production process. It has also been suggested that more time was spent producing a smaller amount of the final product.(4) The Chinese technology enabled the papermaker

to experiment with different raw materials, vary thicknesses and surface textures. This ability to produce more types of paper led to more diverse uses; an action-reaction between technology and the human imagination.

It was during the second century A.D. in China that a court official, Ts'ai Lun, discovered a method of papermaking that involved macerating the paper pulp in a stone mortar.(5) The use of maceration distinguishes oriental papermaking methods from a beating method and is utilized to make the types of paper we know today. It allows for more than one type of original pulp material to be used, although certain substances are known to make 'better paper' than others.(6)

Ts'ai Lun made his discovery during the Han Period (210 B.C. - A.D. 210), which was one of fine, luxurious lifestyles with cultural achievements, such as, Confusianism, Taoism, and astronomy. The arts and architecture were actively promoted by the wealthy court. It was a militarily strong and stable society, which lent an atmosphere conducive to the growth of liesurely pass-times. The arts catered to secular interests with less emphasis on religion. There was a great need for the type of surface provided by paper in the arts of poetry and literature. The adoption of the horse-hair brush and an interest in calligraphy had been promoted since the third century B.C..(7) The system of writing Chinese from this period remained virtually unchanged for the proceeding 2000 years.(8) Ts'ai Lun's papermaking technology was introduced into a period of cultural development which made use of its flexibility and inherent possibilities for variety.

The ancient practise of stamping, combined with papermaking, found one of its earliest roles in religion in the sixth century. During this period, Buddhism flourished and

appealed greatly to the mass population. Its followers were taught to forget all of their suffering in this physical world, and free themselves of all desire, in order to reach the "great void", Nirvana.(9) As a means of conveying this to individuals, printed prayers, charms and images of the Buddha on paper were distributed on a large scale.

Another early use of printed text on paper came after an epidemic of smallpox in A.D. 770. The Japanese Empress, Shotoku, sought priests to drive out the evil spirits which were believed to have caused the disease. She sanctioned the printing of a million paper prayers, "dharani", each enshrined in its own wooden pagoda (Fig. 220).(10) These charms, printed text without images, were intended to ensure long life and forgiveness of sins. The miniature pagodas were placed in every temple throughout the country. It is still arguable as to whether these impressions were taken from wood-blocks or copper-plates. If the latter, it would have been the first instance of the use of metal matrices for printing on paper.(11) Images were eventually combined with printed text, as shown in Figure 221. This woodcut print of the Goddess of Mercy, "Kuan-Yin", was printed separately from the text below it.

Paper was valued even without printed religious images. During the ninth century in Japan, various papermaking establishments were expected to produce paper as a form of tribute, or taxes, to be used by the Imperial Court. This system was discontinued after the twelfth century but may have helped to instill, along with the craftsmen's aesthetic treatment of paper, a profound reverence for paper held by the Chinese and Japanese up until the early part of the twentieth century.(12)

Proceeding from the eighth century, paper continued to

assume new roles, besides religious ones, and as a result more types of paper were made. During the Sung Dynasty, A.D. 1101-1126, the tradition of burying real coin money with the dead was modified by substituting "mock" paper money instead. Coinage left in tombs was easy prey for tomb robbers and the tradition resulted in a large amount of metal money being removed from circulation. Metals were scarce in China, so that the substitution was, no doubt, greatly appreciated.(13) A similar tradition involved the burning of "spirit money", a Buddhist practise which was intended to deliver the soul from Hades. Many different themes were represented on paper and burnt. Some reformers claimed that this custom was absurd and more likely to insult the gods. But it continued to be a popular religious rite.(14)

Chinese papermakers and wood-block printers were kept occupied supplying vast numbers of paper effigies used in China up until this century. Evil spirits believed capable of doing bodily harm and causing "untold hardships", were thought to be frightened off by these images which the believers sought for protection. Images on paper were displayed in the home, "giving great satisfaction and comfort to the people".(15)

Types of paper and the variety of raw materials used to make paper continued to develop in the Orient. Bamboo, china grass, hemp, rags, fish nets, straw, and mulberry, were used to make different papers for specific uses, such as: account books, lanterns, paper for wrapping medicines, umbrellas, window paper, official bulletins, and artificial flowers. Throughout this development, oriental paper retained its hand-made quality and aesthetic beauty which each type of paper displays in its appearance.

The two materials most common in Europe, before the introduction of paper and papermaking technology, were parchment and vellum. The word "parchment" is derived from the name of an ancient city in Asia Minor, Pergamum. It is said to have been used there as early as 1500 B.C., although the invention of it is credited to the King of Pergamum over 1000 years later in 197-159 B.C.. It has been suggested that parchment was produced as a rival material to that of papyrus from Egypt because during the second century, the Egyptian rulers would not allow the export of papyrus. This may have caused an economic impetus for the introduction and adoption of a new material.(16) Producing paper from papyrus was difficult because the plant could only be grown in certain climates. On the other hand, the animals (sheep, calves, and goats) needed to make parchment and vellum could be raised virtually anywhere which allowed for greater access to the raw materials.(17) Parchment was made from the skin of an animal which was split. The hair-side was tanned and made into leather, while the flesh-side was converted into parchment. That skin which was not suitable for treatment as parchment was made into chamois, or suede.(18)

Parchment was a standard article of commerce in the Middle Ages; however, quality varied to a large extent. Sheepskin parchment from Burgundy was described as, "rough and mottled and thin and very ugly and uneven in colour, grey and black and white".(19) This may have been a result of defects in the sheepskin but was more likely caused by carelessness in the matter of getting the skins to the parchment maker promptly. For good parchment, fresh skins were vital and this illustrates one of the problems in producing parchment. Parchment makers must have had regular channels with

meat suppliers, in order to obtain the freshest skins possible. Considering the amount of manuscripts produced on parchment and vellum in the Middle Ages, a great number of animals must have been raised in Europe at that time which supplied both the meat and parchment markets. In order to produce a single copy of the Gutenberg Bible on parchment, three hundred sheepskins were needed. Dard Hunter suggested that, "Had the expensive parchment been the only material available the craft of printing [movable type] would never have developed".(20) I would add that it might not only have been a matter of expense but sheer ability to produce great enough numbers to supply the demand for printed books. In contrast, the demand may not have arisen had there not been a material, such as paper, available for producing inexpensive printed books. Making parchment was also very time-consuming. In the thirteenth century, Bologna was famous for their parchment which they made by an especially tedious process. They would soak the skin twice in lime, once before pulling or scraping the hair off, and once after, and leave them two days before stretching them.(21)

Vellum was made by a similar process as that of parchment, except that originally only calf skins were used. The word "vellum", or "veal parchment" (pergamenum vitulinum), indicates that the raw material was originally calf skins. However, it appears that the term "vellum" took on the additional if somewhat general reference to a better grade of parchment and, later, a better quality of paper. The flesh-side of the young animal skin produced a finer, whiter surface, although because the entire skin was used and not split, the surface tended to be irregular. This difference is more often found in older manuscripts, as later on, workers used

more chalk and pumice on the hair side to make it whiter and smoother.(22) Pieces were often matched in tone and surface quality, placing hair-side to hair-side and flesh-side to flesh-side.

There were difficulties in producing both paper and parchment, or vellum. A certain amount of raw material in each process was lost and general climatic situations could have affected both industries equally. But as has been pointed out, the papermaking process allowed for change towards a better product. As we will see, changes made by the early European papermakers resulted in a better grade of paper and less loss of paper pulp. The 'flexibility' of papermaking outlasted, if not overran, the 'rigid' process of making parchment.

Papermaking comes to Europe.

The chronological outline that Dard Hunter produced, shows that the use of paper preceeded the knowledge of how to make paper.(23) Paper acted as its own 'messenger' heralding the new writing material into the West.(24) This is only reasonable, as no doubt paper was cheaper than either papyrus or parchment.(25) But the mere existence of paper did not necessarily mean the knowledge of how to make paper was available. This information could only be transmitted by craftsmen who knew how to make the paper, along with the technical details of constructing and equipping the mill and producing the paper pulp. There is no mention of any written material on the subject and, furthermore, the knowledge would more than likely have been passed on by word of mouth in the medieval craft tradition. It is said, that in A.D. 751

the Samarkand army captured two Chinese prisoners who, as papermakers, offered to exchange the knowledge of their craft for their freedom. Samarkand was an ideal location for making paper, as it had an abundant supply of water, flax, and hemp.(26) Soon there was a type of paper known as, "Paper of Samarkand", and papermaking was established further west in Baghdad in A.D. 795.(27)

While papermaking technology was slowly making its way to the European countries, an "industrial revolution" was occurring in medieval Europe. This was the result of utilizing natural powers, such as, water-power used to drive trip-hammers, and wind-power for grinding.(28) Despite the potential industrial uses for the water-mill, neither the Roman, Chinese, nor Islamic cultures had shown an interest in its use.(29) Its only use had been on a small scale, for grinding grain, or hulling rice.(30) By the late tenth century in Europe, water-power was being used for purposes other than grinding grain. Fulling mills existed in Tuscany and also in Milan around A.D. 1008, water-driven-trip-hammers were in use in forges in Germany in 1010, and there was a mill for treating hemp at Grenoble in 1085.(31) It should be pointed out that fulling mills were the earliest type of mill that, because they contained similar equipment, were the mills which were turned into papermaking mills.(32)

By the late thirteenth century, water-power had replaced earlier hand- and/or foot-power in such industries of Europe as those which required: tanning and sawing, crushing olives and ore, hammers for forges, polishing and finishing (weapons and armour), grinding pigments, operating bellows for blast furnaces, and creating mash for beer.(33) The Italians in Fabriano were making paper at this time by macerating hempen

cordage and linen rags with a water-powered metal mallet.(34). These were the same materials as those used in Samarkand and Damascus but with the important addition of water-powered machinery.

Not only did the Italians introduce the use of water-power to papermaking but they also fashioned their paper moulds out of wire (bamboo and wood had been the common materials in the Orient and Near East), which made them more durable. They also introduced the use of watermarks, for reasons which will be explained later in this discussion, and they used an animal size (gelatine) which preserved the paper against bacteria as the starch sizing of the Arabs had not done.(35) Compared to the rice paste used as a sizing in Chinese and Japanese papers, animal size created a more durable surface that withstood the use of quill pens. The rice paste size had been suitable for the horsehair brush and ink used in the Orient. The increased surface resistance and durability of the European paper led to a greater acceptance of paper as a substitute for parchment.(36) By the end of the thirteenth century, Italy surpassed Spain and the Middle East as a source of paper for Europe.

For many years historians assumed that early European paper was made from cotton. This was based on the "cotton-like" appearance of early paper which was, in fact, a result of poor methods of maceration, sizing, and glazing.(37) Hemp and/or linen (the materials used by the Arabs) continued to be the materials for European paper until the eighteenth century when cotton came into use. The use of cotton at that time may have correlated with the introduction of the "Hollander Beater", which was a more thorough means of breaking

down the cotton fibres.(38)

The Arabs monopolized papermaking and the trade of paper in the West for five centuries leading up to the thirteenth century.(39) The technical knowledge probably became known to the Italians through economic links with the Arab world and their own purchases of Arabian paper. But it was more than likely transmitted by people who had spent time in the Near East, such as merchants and returning crusaders from the Holy Lands.(40) The Arabs were making paper in Xátiva, near Valencia, in Spain, by the middle of the twelfth century, but this instance should be considered more of an offshoot from the Islamic states than an example of the first papermaking centre in Europe; indeed, this area would not be considered a part of the European continent at that time, being entirely governed by the Arabs.(41) The following suggestion was made by A.F. Gasparinetti. He maintained that a very direct influence of the Arab method of papermaking resulted from attacks made on Ancona in the tenth and eleventh centuries.(42) The port of Ancona was important as a departure point for crusaders to the Near East and was a strategic centre for attack by the Arabs. Prisoners taken during such attacks would have been left behind and could very likely have spread the knowledge of papermaking to the interior, i.e., Fabriano. In thirteenth century documents, it is shown that a suburb called "Borgo Saraceno" (Saracen Town or Quarter) was situated on the road that enters Fabriano from Ancona. From this, we may assume that a large number of Arabs were living in Fabriano at the time when papermaking was just being established in that city.

A Genoese document, dated 1235, refers to an Englishman, by the name of Walter, who was bound under contract to an

Italian, Mensis di Lucca, in order to, "causa faciendi papirum".(43) How was it that an Englishman would have known how to make paper, when England had few contacts with the Arabs, purchased their paper from European sources, and did not have her own paper-mills until the late fifteenth century? The Third Crusade had attracted English merchants to the Holy Lands and there were also English colonies in the Levant during this time.(44) Perhaps this is how "Walter" obtained his knowledge and came to be working and living in Genoa. There is not enough evidence in the contract to know whether or not "Walter" was a merchant or a crusader. But it seems unlikely that, as a merchant, he would have been bound over to another merchant to work as a labourer. The tradition that crusaders brought the knowledge of papermaking from the Near East to Europe has little documentation.(45)

In 1253, one Martino di Rivo-torbido "qui facit cartas", was established in Genoa and later, in 1255, two more merchants began a partnership in making paper at Genoa.(46) At any rate, Genoa did not succeed as the earliest papermaking centre in Italy. It appears that the already established importation of Arab paper inhibited the growth of a local papermaking industry.(47) The one thirteenth century Italian city which did have a flourishing papermaking industry was Fabriano. Why was Fabriano successful, where Genoa had failed or at least been kept in the grips of pre-established businesses?

The earliest papermaking centres in Europe: Fabriano and Nürnberg.

From the twelfth to the thirteenth centuries, Fabriano

experienced an intensive growth in industry and local government. The most powerful industry at that time was the Guild of Ironworkers, established along the banks of the Giano river. In addition to this, the woolen and cloth industries were especially large owing to the readily available supplies of hemp and flax.(48) The civic power and population of Farbiano grew due to the influx of labourers and the development of various craft guilds and corporations.(49) These groups were soon to monopolize the government of the city, overwhelming previous feudal lords. By the twelfth century, "The Commune" gained power over the castles in the county and Fabriano became the "Overlord of the County", recognized by the Pope and the Princes.(50) In this regard, it was a very important and powerful centre of industry and local government. The Commune continued in power until the early fifteenth century when the Sforza family annihilated the ruling Chiavelli family and dominated the city through oppression from 1435-1444. During this time, the economy of the city was disrupted and never regained its organization and power. The height of Fabrianese paper production falls within the period of industrial stability, i.e., the thirteenth and fourteenth centuries, before the Sforza overthrow.

Fabriano was idealy suited for the establishment of early paper-mills, due to its abundant supply of fresh water, the vigorous industrial situation, and its power as a political and economic centre. Because of these factors, the 'success rate' of a new industry, such as papermaking, would have been very high in Fabriano. As an industry, papermaking apparently found little competition amongst already established craft guilds in the city and, in fact, was readily

promoted as shown by the innovations made in the Arab papermaking method, i.e., using wire moulds and watermarks, sizing with animal glue, and utilizing water-powered wheels to drive the stampers. These changes, made in the early stages of paper production in Fabriano, resulted in a better, more easily marketable grade of paper.(51)

By about 1310, fifteen papermakers existed in Fabriano and by 1321, no less than twenty partnership agreements and engagements of labourers or workshops existed, "for the performance and practise of the art of paper-making".(52) By the mid-fourteenth century, at least thirty-five papermaking establishments had been recorded in the city.

> "The paper-making industry at Fabriano during the middle-ages was divided as follows: First of all came the 'paper-masters', that is, the true and actual makers of paper, owners or leaseholders of paper-works, or 'paper-mills' as they were then called and as they are still termed in various European languages. These restricted their labours to the production of the paper sheets only, while for all the successive operations required to finish the paper, such as glazing, folding, packing, the paper passed into the hands of those we now call "allestitori" or finishers, but who were then known as "Cialandratori" or glazers, from the "Cialandra" or glazing roll, the instrument used to glaze the paper (whence the modern term 'calender'), and of the "apparecchiatori" or packers who had their shops within the city wall"...
> "Finally, there were the merchants or dealers in paper, who correspond to the modern wholesalers and who purchased the paper for their own account from the local manufacturers, or placed with them the orders they received from their customers. These formed the heads, as it were, of the commercial sales organization."(53)

A number of Fabrianese began paper-mills elsewhere in the Peninsula; at Bologna, Treviso, Pinerolo, Battaglia, and Salò. The Senate of Venice voted special priviledges to the paper-mill at Treviso, while the Fabrianese had special priviledges granted to them by the Florentine Republic.(54) Certainly such official recognition by local governments made

a difference to the success or failure of a new industry. There were no restrictions imposed upon the Fabrianese going to other cities with their papermaking knowledge until the early fifteenth century. In 1436, an ordinance issued by the Governors of the Fabriano Commune (re-confimed in 1470), "deemed it advisable, in order that the local industries should not suffer so much loss, to lay down, 'that no citizen of Fabriano, of whatever condition, should dare, under penalty of a fine of one hundred pounds, to erect outside the city and beyond a radius of fifty miles any building to make or work paper or to instruct in the said craft any person not living in Fabriano'"... .(55)

It is fortunate that the trade books of a fourteenth century merchant in Fabriano, who dealt mainly in paper, still exist. They lend an insight into various aspects of early paper production in that city. These include: the amounts and types of paper produced and marketed from Fabriano; the watermarks used by paper-mills in the area of Fabriano; and the materials bought in the running of one particular mill.(56) This merchant, Ludovico di Ambrogio, dealt in many kinds of merchandise, such as, wool, spices, sheet iron, and paper. One paper-mill noted in his records was that of Pietro de Meo del Vanno, located in the "plain". This mill had one vatman (papermaker) along with other less important workers. Senior Ambrogio handled the financial aspects of the paper-mill and dealt with all of the money matters, including, everything from paying the workers to buying the animal skin scraps used for making the paper size. He also organized the marketing and shipment of the final product.(57)

In the first book, covering the years 1363-66 (inclusive), Senior Ambrogio purchased paper outside of Fabriano twice;

once from Sigillo and once from Pioraco. The former contained the watermark of The Griffon and the latter of A Hare and of The Dragon. The other papers all came from the "cambora", or stores in the paper-mills, which were his property, or had been bought from men of Fabriano whose names appear in the records.(58) In 1410, he took on a partner by the name of Tomasso di Nassimbene and, in addition to the paper supplied by the del Vanno mill, specific mention is made of paper received from a second mill (after 1410) of Salvuccio de Guido (Nassimbene's paper supplier?). This paper is recorded in the trade book for the years, 1410-11.(59)

The cities of Venice, Genoa, Florence, Pisa, Siena, Lucca, Talamone, and smaller towns appear repeatedly in the first book as recipients of paper shipments from Fabriano.(60) Records taken from this book indicate that, for instance, large amounts of paper were sent to Provence on June 22, 1364 and to Montpellier on November 23, 1365. In just two years (between 1364 and 1366), two hundred and forty bales of paper were shipped to Talamone (a port on the coast of Tuscany).(61) Information in the other three trade books (the registers for the years 1367-94 have not been preserved) cover the years between 1395 and 1414. They record consignments of paper to the same major cities (as those cited above) and state the names of merchants in those cities with whom Senior Ambrogio did business.(62) Within that period of about twenty years, an average of forty bales of paper per year were forwarded to Tuscany alone. This would have been paper produced by two paper-mills, the one that Senior Ambrgio dealt with in Fabriano and the paper-mill of Tomasso di Nassimbene (after 1410).

It is quite rare to find descriptions of types and

grades of paper, details of watermarks, and sizes of sheets with regard to paper made in the fourteenth century. In the trade book covering the period 1363-66, just such details have been recorded. For types of paper, the following index is given:

> "la charta fina (fine or thin paper),
> la greve (coarse or heavy paper),
> la charta da involtie (sic) (wrapping paper),
> da suggellare (for stamping) (i.e.,for stamp duty) and
> da squartare (to be quartered, that is, cut into quarto sheets), and
> la charta da meglioramente e de fioritto (for conversion, that is, making into something else, and for making flowers (?) which must have been the best qualities of all papers, as the "floret" or fioretto paper still is today.)"(63)

The terms used for sizes were: "imperiale", "reale", "grande", and "piccola". When mentioning shipments of paper, the term "balle" (bales) is used followed by a Roman numeral indicating the number of bales sent.

Further insight can be gained by notes from the same book concerning the role of watermarks in Fabrianese papers. A typical note from the book reads as follows:

> "We sent on April 11 (1363) to Lucas de Scilio and partners in Perugia by Rofino the servant of Puccio, 11 bales of Royal paper with the dragon watermark."(64)

A further selection of watermarks, specifically from the del Vanno mill, include: The Bell, Demi-Stag, Half-Moon With Star, Demi-Griffon, Two Flowers, Stork, Lily, Beans, Two Circles, Crown, Dog, and Pomegranate.(65) They may bear some relationship to the grades of paper mentioned in the same document: fine, fine thin, fine small, and better and ordinary wrapping papers.

One final selection from the trade books describes materials to be sent "alla valchiera del piano", that is, to the "stamps in the plain", during the period of April 18, 1410 to May 23, 1411. The term "valchere", or "gualchiere", (a local Fabrianese term) was used to refer to a fulling mill. The same term is used in the context of stamps for making paper pulp. Similarities between the two types of mills, paper- and fulling mills, was previously mentioned. The materials and amounts have been summarized as follows:

Entirely good rags	14,368 pounds
Rags of the best quality	9,381 "
Coarse rags	3,654 "
Rags of worst quality	710 "
	28,113 pounds

(Plus 12 reams of torn paper.) (66)

As we have seen, commercial prospects played a major role in the conveyance of technical information and this is perhaps best exemplified in the North by the case of a German merchant, Ulman Stromer. Stromer was a member of the senate in Nürnberg and an ardent businessman who kept a diary of his experiences as one of the first paper-mill owners in late fourteenth century Germany. Given the competitive business atmosphere of Nürnberg and the early paper market, he was obviously intent on siezing the opportunity to become the first papermaker in Germany and monopolize the production of paper in that country. On trading expeditions to Italy, Stromer had seen paper-mills in operation. The technology was unknown in Nürnberg, so that he had to contract Italian papermakers from Lombardy. The contract with the Italian craftsmen read:

> "In the year 1390, Franciscus de Marchia, and Marcus, his brother, and his manservant Bartholomeus pledged their loyalty to me and swore on oath to the Holy Saints that they would forever be faithful and would not divulge the secrets of papermaking to anyone in all the German lands this side of the mountains of Normandy."(67)

Stromer made the Italians swear before several witnesses; a procurator, his brother, sons, and brother-in-law. The oath seems extreme in its demands for ultimate faithfulness and secrecy. But, no doubt, Stromer considered it important, as a keen businessman, to safeguard his interests and limit as much competition as possible in the early stages of his new business venture.

In addition to the Italian workmen, Stromer employed a German overseer by the name of Closen Obsser. His contract was as binding as that of the Italians:

> "He promised to be faithful unto me and declared on his oath that he would be true to me and my heirs, that he would be my overseer at the mill, keep me from harm and that as long as he lived he would make paper for no one else save me and for my heirs and would not teach any man to make paper in any way at all. This took place on the Sunday next before St. Lawrence Day, in my room at the time of evening prayer in the year 1390 when my son Jörg was present."(68)

A second excerpt from the diary describes certain "difficulties" caused by the foreign workmen:

> "..the Italians were most troublesome the first year and did as they pleased and caused me many difficulties, not suffering the third wheel to run at all. My first two wheels ran eighteen stampers and even these were left idle a great part of the time as the foreign workmen wished to produce as little paper as possible so as to force me to let them have the mill for a rent of 200 gulden a year. This I would not agree to do and they then offered also to give me an amount of paper. From this I understood that they wished to ruin me and deprive me of my paper mill."(69)

Most mills (by the fourteenth century) owned three sets of stampers, each performed a particular operation. The first, having iron teeth, helped to fray the cloth and tear it apart. The second, not quite as rough, processed the rags into a lumpy pulp called "half stuff". Fresh water ran through the mixture during these early stages, cleaning the material. A third set of stampers, made of smooth wood, created the final smooth pulp mixture.(70) Without the stampers, the first stage of papermaking was impossible.

The Italians realized their importance to the mill and decided to take advantage of their position and run the mill themselves. Perhaps Stromer's fears are justifiable. In any case, the Italians caused enough problems in the effective running of the paper-mill to force Stromer to take action. As a result of underestimating his character, they found themselves confined in a tower for four days. A reconciliation was arranged through Stromer's brother-in-law and the workmen re-affirmed their oath and swore not to cause any further trouble.(71)

Other secondary workmen, such as, the carpenter, Erhart Zymerman, were taken on under yearly contracts. He was hired in 1392 to repair the stamps and vats. Besides the general carpentry work in the mill, Erhart was employed to polish paper and his wife was employed to sort rags, to hang paper on lines to dry, and to count the paper. They were paid in wages and also given a house to live in and, "firewood withal".(72)

Stromer operated the mill from 1390-94, at which time the property was leased to a Jörg Tyrmann. Stromer died in 1407 at the age of seventy-nine. These excerpts from his diary substantiate the fact that papermaking knowledge had

to be conveyed through craftsmen who knew the details of making paper. Their importance is proven by the story of the Italian workmen who disrupted the mill operations. The contracts express an intent to limit outside competition developing in Germany, or a situation similar to that which occurred from Fabrianese workmen migrating to the surrounding regions of Fabriano.

The general impression given by the Fabrianese and German documents, is that by the late fourteenth century, papermaking and paper marketing had become an extremely viable and desirable industry and trade. The improvements made by the Fabrianese helped to secure a larger market for paper and also enabled more paper to be produced. There was certainly no decline in the establishment of paper-mills during this period and large amounts of paper were being transported throughout Europe. Granted, selections have been made from these documents, but I suspect that a great deal of further documentation could be obtained with more research in the city archives of early papermaking centres, such as, Fabriano and Nürnberg.

Making paper.

Papermaking is actually a combination of two processes. The first, involves the decomposition of raw material into a fine pulp and the second, entails the collection of the pulp onto a surface, forming the sheet of paper.

During the pulp making process, it is important not to cut the fibres of raw material but to separate them by pulling them apart, thus increasing elasticity and bonding potential between the strands. In order to achieve this state

of maximum bonding, the fibres must be beaten with a great amount of water over a long period of time. The amount of time involved depends on the type of machinery used and whether or not a caustic agent, such as lime, is added to the pulp mixture acting directly on the fibres to decompose them. The strength of the paper is dependent, in part, upon how long the pulp is beaten and whether or not lime is added. Paper made from pulp beaten a short time will be soft and less durable than that which is made from pulp beaten a longer time, which will be crisp and very durable. Paper currency is made from the latter type of paper.

The "Hollander Beater", invented in the late seventeenth century, helped to accelerate the decomposition of raw material. As a result, a "whiter" paper was made.(73) Basically, the Hollander is an oblong tub with a cylinder suspended in it. Blades are attached to this cylinder, which rotates causing the pulp to flow around within the tub (Fig. 222). The blades press the raw material against a bedplate below it. The cylinder suspension can be raised or lowered in order to control the degree of shredding required.(74) The Hollanders were sometimes combined with stampers, which allowed for additional cleansing and shredding. They required less power than a stamper, cut down on fermentation time, and in five or six hours, could make the same amount of pulp that it took the stampers twenty-four hours to prepare.(75)

Types of vegetable matter or raw material used for paper pulp can vary; however, the paper produced in fourteenth and fifteenth century Europe was made from linen rags and hempen ropes. The materials were sorted according to their soiled condition and were then placed in large vats of water and left to ferment (Fig. 223). Stampers were used to beat

the linen and hemp into a pulp. These were generally wooden hammers that rose and fell by means of a series of cams on an axle (Fig. 224). As in the case of Ulman Stromer's mill, there were generally three sets of stampers all working at different stages in the pulp production. The pulp was agitated constantly to keep it from settling and to mix in the greatest amount of water. This increased bonding potential, and, hence durability. Sometimes, the vat of pulp was warmed which increased evaporation from the pulp as a formed sheet of paper, leaving less water to be pressed out and quicker drying.

A paper mould is used to form the sheet of paper from the liquid pulp. It is made of a wooden frame with parallel wire ribs forming a 'screen' from one edge to the other (Fig. 225). Wires were sewn to the ribs, about $1\frac{1}{2}$ to $2\frac{1}{2}$ inches apart, although this varies between types of paper. These sewn wires create what are known as, "chain lines", and the ribs create the, "laid lines".(76) A wooden frame called a "deckle" is placed over the mould to prevent pulp from draining over the edges.

The mould is dipped into a vat of pulp and brought up using slow and even, forward and backward movements, during which the excess water drains off the sides and through the mould in a sieve-like fashion, leaving the accumulated wet fibre on top of the rib supports. The deckle is removed and the mould is then flipped over in one motion onto a piece of felt. With a slight pressure from the back, the paper pulp is "couched" (pronounced cooched) onto the felt.(77) The same process is then repeated, stacking the felts with newly made sheets of paper sandwiched between until a sufficient number is obtained. This accumulation of felts and paper

is known as a "post". The post is then collected and taken to be pressed. These three stages are shown in a sixteenth century French engraving (Fig. 226). Early European papermakers used massive wooden screw-presses that took the combined strength of several workers to operate. "At the first pressing, enough water would be squeezed out to reduce the height of a post from two feet to about six inches".(78) A series of further light pressings were done in order to achieve the desired smoothness.

Finally, the damp paper was pulled off in groups of four and five in order to prevent wrinkling and curling during drying. They were hung over horse- or cow-hair ropes coated with beeswax, usually located in the loft of the mill where the air was warm and relatively clean (Fig. 227). The type of treatment applied to the paper in order to finish the surface depended upon its ultimate use. Scribes wanted a smooth surface, similar to parchment, for the use of quill pens. Printers required less of a hard, smooth surface, so that their heavy, thick inks would bite the paper without too much pressure from the printing-press. This surface treatment is known as "sizing".(79) The animal gelatin used by early European papermakers was made by heating the scrapings from animal hides (a form of glue). The sheets were lowered into a vat of sizing and then put through a sizing-press to remove excess liquid (Fig. 228). When dry, the sheets were rubbed or burnished by hand on one side with a piece of agate.(80) This process smoothed and sealed the surface.

Looking at paper.

The oldest paper found in the archives of Fabriano is a

deed dated 1283. It was made from hemp and sized with glue and gum tragacanth. It was described as, "very coarse, of irregular transparency, made of badly beaten rags, the chain lines are irregular distances from each other and not firmly stretched, all of which point to the great difficulties experienced by the maker when preparing the paper stuff and making the sieve of metal wires for the mould. Then follow other papers dating from 1286, 1287, and 1290, in which the same defects as in the first specimen are to be observed."(81)

It is important to look closely at a sheet of paper and examine it for those peculiarities which are inherent to each individual sheet. The laid and chain lines in paper, produced as a result of the paper pulp settling more thinly over the ridges in the mould surface, can be seen, usually very clearly, when the paper sheet is held up to the light. The laid lines can be counted and these numbers compared amongst various sheets of old paper as a means of distinguishing between types. For instance, the paper used by Erhard Ratdolt of Augsburg, in 1490-92, has thirty-two to thirty-eight laid lines to the inch, whereas a paper used by Berthold Ruppel at Basle, in the late fifteenth century, has twenty laid lines to the inch.(82)

A "watermark" is made by the same process as that which makes chain and laid lines, the paper pulp settling more thinly in some areas. Watermarks are made from a design fashioned out of wire and attached to the mould surface (Fig. 229). The design was drawn upon a block of wood, then headless nails were driven into the pattern marking the contours. The wire was then fitted over this model and shaped accordingly. In this way, numerous designs, very similar in contours, could be made.(83) This process helps to explain the near

identical shapes of many marks. The marks were made and used in pairs, as were the moulds, and the same craftsman made both objects. This also explains the appearance of many watermarks as "twins".(84) Watermarks are not found in either Oriental or Arabian papers.(85) From 1237, paper in Xátiva, Spain was made without watermarks until about 1370. Only paper from Italy bore watermarks and it has been suggested that it was the influence of Italian paper which instigated the use of watermakrs in paper from Xátiva from 1370 onward.(86)

Two experts agree that watermarks were discovered by accident in Italy:

> "One of the wires forming the metallic mould or sieve may have become broken or bent, leaving its imprint or trace on the sheet of paper, while it was being made. This will have suggested the idea of giving this wire a definite form or design, and probably explains the primitive and simple appearance of the earliest watermarks, which then with time and with the improved means the paper-makers possessed, gradually attained their present state of perfection."(87)

The experts, Gasparinetti and Milliani, rejected the opinion that the watermarks indicated the locality where the paper had been made and instead, affirmed that it indicated the maker. But the thousands of watermarks produced and recorded show us that both locale and individual maker became elements in watermark designs. Certainly, the earliest (late thirteenth century) group of watermarks are simple, geometric shapes. This may be because they were the easiest designs to shape out of wire, before the use of wood-block forms, but also because extensive variations were not necessary in the early history of using watermarks. It has been suggested that these marks are due, in general, to the "lively entre-

preneurship of Westerners", putting a trademark on their products.(88) It is reasonable to assume that watermark designs grew in complexity and variety as the papermaking industry developed.

A more fascinating, if not fanciful, proposal in answer to why watermarks were used was made by Harold Bayley in his book, The Lost Language of Symbolism. He suggested that watermarks were employed by religious groups that made paper and used the marks as symbols of their religious beliefs.(89) This "proposal" was definitely dismissed by Allan Stevenson, who supported Briquet's opinion that this was a nonsensical approach to the discussion of watermarks, writing several articles which disproved many of Bayley's ideas.(90) Dard Hunter dismissed this notion based on the existence of so many variations of designs and numbers of watermarks. He suggested that the variety is due to changes made by the workers when the wire designs fell off of the moulds during use.(91)

The use of an 'invisible' mark in the paper would have been the only means of distinguishing types of paper, as differences are not always noticeable on the paper surface. It seems reasonable to suppose that watermarks also had a very functional purpose; that is, they were a kind of trademark for the craftsman who made the paper (a highly developed skill) and they were useful in identifying pairs of moulds while the paper was being made. The design elements were taken from historical symbols relating to a particular city or region in combination with personal details of the papermaker. The Crozier of Basle is tied historically to that city and was the motif used in the earliest paper made there.(92) The moulds were handled by two men during the

papermaking process. One, the vatman, formed the sheet and then handed it to his assistant, the coucher, to transfer the sheet to the felt, while the vatman formed a second sheet. Identical marks would have made it easier to keep the pairs of moulds in order.(93) Some watermarks show entire names written and combined with a symbol (animal or motif), and some have only initials attached. Both indicate an attempt at a more personal method of defining the symbol, making it a more specific mark with regard to the individual papermaker. There are examples of paper from the seventeenth century which are known to have designated certain sizes of paper. The mark of the Arms of France and Navarre appears in the demi folio of F. Willughby's Ornithology (London, 1768). It is known to have been commonly used by Norman papermakers to designate a demi, or "carré", size of paper.(94)

The four published volumes of Briquet's work reproduce 16,000 watermarks and their variations made before 1600. In addition to this, he left 30,000 tracings of unpublished marks in Geneva. In the group of pre-1600 watermarks, the Bull's Head motif occurs in at least 1400 variations.(95) This mark appears as early as 1310 and continues to be seen in papers for the following two hundred years. As a symbol, the Ox, was emblematic of strength and patience, of Christ the true sacrifice, and of all who patiently bore the labour of life for the good of others. Whether or not this symbolism was influential in the selection of this motif is left to conjecture. There remains an infinite variety of motifs used.(96)

"It is obvious that watermarks (and other "stigmata"

derived from the papermould) must have some relevancy in questions of dates. For each mould was produced at some definite moment in history, could we know it; and each batch of paper was made in a certain day or week. Before that date the mark and the mould was continually deteriorating; so that the reams made in one week were seldom precisely the same in their markings as those made in another week. After some months of use a dilapidated filigree on a mould was often replaced by another. And at the end the mould itself was discarded, thrown into the back yard. After that there was certainly no paper with the peculiar characteristics of that particular mould. Evidently, securing a knowledge of the life-history of typical moulds is one way to approach the problems of dating.

We can learn something of this life-history through the study of the same mark, or pair of marks as they change form within a group of books or even within a single volume."(97)

As a bibliographer and filigranist, Dr. Stevenson was working with groups of watermarks found in manuscripts and printed books. Compared to the student of single-sheet prints, he was fortunate to have large numbers of complete watermarks in dated volumes to work with. This makes his methods of investigation and analysis more readily substantiated. But his methods of observation and technique can also be applied when looking at the paper of individual woodcut prints and engravings. One may not be able to determine as precise a date, as when working with manuscripts but it is nonetheless important to know about the making of a sheet of paper, adding its "life-history" to that of the printed impression which appears on it.(98)

Some specific observations to be aware of are:

1) A watermark that has a sprung wire.

2) A piece of wire that has separated from the form as a whole.

3) Sewing points where the form has been attached to the mould surface. These tend to appear along the chain lines where the form would be most likely to hold fast.

4) Threads from sewing points that have come loose.

Watermarks can be measured and these measurements compared, as in the amount of laid lines in a given area. The height of two comparable watermarks can vary slightly (half a millimeter) due to shrinkage of the paper. This is the result of the paper being dampened for printing, then exposed to heat and light.(99) The mould side of the paper will show these marks (chain and laid lines, and watermarks) as indentations in the surface. This is generally the smooth side of the paper; however, printers often chose the opposite side, the rougher side, to print on so that the ink will bite more successfully.

"States" of watermarks are created during the working life of the mould.

> "As the coucher removes the sheet from the mould, he raises the side in his right hand -- and as the sheet comes off it must exert quite a pull on the wires of the watermark... So a loose watermark would be pulled.. gradually."(100)

New states of watermarks were created by the movement of loose wires along the mould surface and by the pull on the mould during paper manufacture, both at the vat and the couching post. Because of these pressures, one or more points would come unsewn or the wire forms would fall apart before the moulds they were on were discontinued in use. At that time, the wires became bent and mishappen and increased differentiation from the "twin", or duplicate mark. Further change occurred during the re-sewing of the mark.(101)

In the demi folio previously cited by F. Willughby, one of the watermark forms had a loose wire which moved about

during the papermaking use of this mould and left impressions in various positions in the paper. At the same time, in another mark, some deterioration in the form also occurred. Any undated example of paper with the same marks in similar stages of deterioration would have to date from the period when these two moulds were in use. An example of paper which shows an "evolution" of at least six states of deterioration and re-sewing, all in one volume, is the small folio of Inigo Jones' Stonehenge, (London, 1655). The marks, Twin Pots Lettered C/AB, have some handles that are neat and S-like, and others that are distorted. In some states, the marks are sewn between chain lines, and in others on chain lines (Figs. 230 and 231).(102)

Within the immense variety of watermark forms, the sewing points remain distinct to each form. Early marks have visible "dots" due to the fairly coarse wire used in the sewing. This wire became finer, creating smaller less obvious points, and even later, the dots give way to continuous over-sewing along the outer wires of the watermark form.(103) These points cannot be seen in every sheet of paper, but they are fairly obvious when they do appear. It is important to note that sewing points were not reproduced in Briquet's work and only in a very few other works published in this century. They rarely reproduce chain and laid lines also, making comparisons less precise.

Finally, aside from changes which may have occurred during the papermaking process, at the end of the working day, the moulds were washed and cleaned with brushes. This may have created yet further alterations in the watermark (and mould) wires.(104)

In considering the use of watermarks for dating purposes

one must take into account a certain "time-lag" that occurred between the making of the paper and its actual use. This time-lag could vary from a month or so, to a number of years, depending on the length of time the paper was seasoned or shelved until use, and marketing delays caused by the dealer or printer. This is s subject which was not generally understood by filigranists and bibliographers, as indeed, it is a difficult question to answer definitively. Much depends upon the type of paper used, whether it was an "ordinary" paper, which could be used at once, or a "fine" paper, which may hve benefitted from seasoning. Papers of unusual size would also, along with fine papers, benefit from seasoning.(105) Fine papers may also have been kept for special editions or prints. Because of this speciality, moulds for some fine papers might have been used off and on over a numbers of years. This causes difficulties in determining the exact date of production.

Briquet allowed fifteen years as the life of a mark and thirty years as the period in which it might be found. To Dr. Stevenson this was not statistically logical and obscured the real possibilities. He tended to allow a one to five year span concluding that more study of this subject would be helpful in determining closer approximations.(106)

"In examining old books, a great profusion of watermarks may be noted in the paper of an individual volume, some fifteenth century works containing a dozen or more different papermarks in a single book."(107) A mixture of papers in one volume may result, "from bringing together the limited product of a number of one-vat mills, or else the purchase of various remnants of stock. In the latter instance the time-lag for some sorts might be several years."(108) Some

books can be homogenous in the type or types of paper used in their printing. If a printer purchased a quantity of paper for a volume, any delay in use is likely to have been in months rather than years.(109) Some early books though, were only printed on demand and, therefore, the different volumes show totally different watermarks, as the paper was probably purchased or assembled when printing was to be carried out. At times, only the best examples of a particular supply of paper were used for printing, leaving the rest to be used at a later time. When just a few sheets were needed, these could have been used. This could explain the occurrence of certain dated watermarks that were used (in dated publications) several years after their mark date.(110)

It is probably fair to say, that definite dates are not usually obtained as a result of watermark analysis in the paper of prints made in the fifteenth century. But this is solely dependent upon how much of the mark appears in the paper; how distinct its characteristics are; and how often it and/or variations of it have been recorded in previous research. It is not an impossible task and certainly one that should be considered and understood.

The major problem with publications on watermarks, remains the disjointed nature of research that has been done. Most of this work has been carried out by individual scholars. There has been no recognized, consistent method of analysis and description, and because of this, each publication tends to either lack details or else emphasize other aspects too strongly. Allan Stevenson was attempting to introduce just such an analytical approach to the study of watermarks. His analysis is very detailed but one should be acquainted with the full range of possible observations, in order to benefit

the most from whatever evidence that exists in the paper observed. Certainly more attention to the study of watermarks and to Stevenson's methods is necessary. It is an area that should not be ignored by students of prints but should be investigated to the fullest extent.

FOOTNOTES

APPENDIX A.

1. V.A. Mosin and S.M. Traljic, Filigranes des XIIIe et XIVe siecles, (Zagreb, 1957).

2. The words "paper", "papier", and "papel", are derived from the Greek and Latin words "papuros" and "papyrus". "Bubloi" was the Greek term used to denote the inner fibre of the papyrus plant, and writing on sheets of papyrus were known as "biblios", in Latin as "biblia", hence the word "Bible". D. Hunter, Papermaking, the History and Technique of an Ancient Craft, (New York, 1947), p.17.

3. Hunter, op. cit., p.6.

4. A.F. Gasparinetti, "Paper, Paper-makers, and Paper-Mills of Fabriano," Zonghi's Watermarks, (Holland, 1953), p.70. "It has indeed been proved that the Arabs beat their rags, in very small quantities, in mortars with a hand-pestle, in order to reduce them to pulp, a process still used to-day in the country districts of China and Japan for the making of paper in the homes. It is obvious that such a process did not permit of more than a very modest production of paper and one can understand how urgent was the search for a method which would provide a more rapid defirbration of the rags and thus be a means of increasing production." The Arabs later developed the use of a man-powered trip-hammer but the Chinese and Japanese continued to make their paper pulp by hand, using the beating method.

5. Library of Congress Exhibition Catalogue, Papermaking, Art and Craft, (Washington, D.C., 1968), p.8.

6. The following is an account of the Japanese papermaking method:

Young mulberry trees are cut in the winter each year before they have grown too large and coarse. The stems are tied in bundles and left for a long period of time in running water, which loosens the bark. The bark is then stripped off and as much of the dark brown skin beneath is removed as possible. The white inner bark is then boiled in vats, washed, and steam-bleached. Impurities are picked out by hand. Men, using wooden beaters, beat the material into individual fibres. The pulp is then washed and placed in a large bath. A mucilage is added which spreads the fibres evenly and allows them to knit into a strong paper. (This is like adding the sizing to the vat mixture.) A thin layer is lifted out of the vat in a tray (mould) of narrow bamboo slats which allows the water to run off leaving the fibres on top. The sheet is then removed and added to a pile. The sheets are then dried, preferably in the sun. The resulting paper is semi-transparent, slightly off-white in colour, and has pronounced chain and laid lines. The very long, closely knit fibres provide a very strong paper. From: J. Hillier and L. Smith, Japanese Prints, 300 Years of Albums and Books,

FOOTNOTES: APPENDIX A. continued:

(London, 1980), pp.13-14.

7. Library of Congress, op. cit., p.8.

8. H. Munsterberg, History of Chinese Art, (New York, 1969), pp.71-72.

9. Munsterberg, op. cit., pp.90-91.

10. Hunter, op. cit., pp.66-70. Although Gutenberg discovered cast type and assembled it on a plate, the Chinese were the first to use printing (on paper) as a means of communication. A. Hyatt-Mayor, Prints and People: A Social History, (Princeton, 1971), pp.3-4.

11. Library of Congress, op. cit., p.15. The charms were, indeed, printed from "copper blocks" introducing this technique to the world.

12. D. Hunter, Ceremonial Chinese Paper, (The Mountain Press, 1937), p.75. A tradition promoted the collection of paper found anywhere and placing it into a receptacle onto which was attached a red label with the inscription, "Respect all written paper and treat it with care".

13. Ibid.

14. Medieval Europe experienced short lived attempts at reforming such superstitions but the cults remained to flourish along with the customs and folklore that supported them.

15. Hunter (1937), op. cit., pp.65-68. An example of one such image is the "Kitchen God" and the custom of its annual 'sacrifice'. The Kitchen God was hung on the wall for one year. Then bundles of dried grass and tall candles were placed at either side of the hearth. The "faded, worn, and dingy image" was then taken from the wall and placed on the bundles. The candles were then lit and were used to set the grass and the paper on fire. The fumes of the "paper gods" were thought to ascend upward into the "next world". A new image was procured at the New Year, "only to become smoky, torn, and greasy during its year of protection service". Such customs gave great importance to printed images and must also have necessitated a large production of them. Hunter, op. cit., pp.68-69.

16. Hunter (1947), op. cit., pp.12-13.

17. D.V. Thompson, The Materials and Techniques of Medieval Painting, (London, 1936), pp.28-29.

18. Ibid.

19. Ibid.

20. Hunter (1947), op. cit., p.17.

FOOTNOTES: APPENDIX A. continued:

21. Thompson, op. cit., p.25.

22. Hunter (1947), op. cit., pp.15-16.

23. 793 - paper fabricated in Baghdad, introduced from China.
800 - paper used in Egypt.
900 - "true paper" (from macerated pulp) made in Egypt.
950 - earliest use of paper in Spain.
1102 - earliest use of paper in Sicily.
1150 - St. Felipe de Xátiva, paper manufactured in this Spanish city, high quality, sold to East and the West.
1151 - stamping mill for maceration of rags in operation at Xátiva, adopted from the Orient.
1154 - use of paper in Italy, probably imported from the East (or Spain?), no other specimens are found in Italy until 1276, date of paper-mills in Fabriano.
1228 - earliest uses of paper in Germany.
1293 - first paper-mill in Bologna.
1309 - first use of paper in England.
1322 - paper used in Holland.
1348 - according to records, a paper-mill was established in St. Julien region near Troyes, perhaps the earliest mill in France.
1405 - a paper maker named Jean L'Espagnol mentioned at Huy, probably first maker of paper in this locality.
1495 - first paper-mill in England.

From: Hunter (1947), op. cit., pp.469-481.

24. "Around the time of the discovery of paper by Ts'ai Lun, China was engaging in an active silk trade with the West, to Turkestan, Persia, and Syria." By the fifteenth century, it was in use all over central Asia. Library of Congress, op. cit., p.16.

25. L.White, Jr., Medieval Religion and Technology, Collected Essays, (London, 1978), p.226.

26. "Samarkand, with its abundant stock of flax and hemp and a ready supply of water from irrigation canals, was naturally suited to papermaking.", Library of Congress, op. cit., p.16.

27. Ibid. Paper became readily available and manufactured throughout Asia. The Grand Vizier, Ja'far, ordered all government transactions to be recorded on paper, thus giving official impetus for the paper market to develop. In fifteenth century Switzerland, a similar "impetus" was created by the meetings of the Church Councils at Basle from 1431 to 1448. These, "not only brought the city international prestige but also created a market for goods and services. One sorely needed commodity was paper on which to record the pro-

FOOTNOTES: APPENDIX A. continued:

ceedings of the councils". Library of Congress, op. cit., p.24.

28. L. White, Jr., Medieval Technology and Social Change, (Oxford, 1962), p.84.

29. White, Jr., (1962), op. cit., pp.226-227.

30. White, Jr., (1962), op. cit., p.81.

31. White, Jr., (1962), op. cit., pp.83-84.

32. R. Lopez, "The English and the Manufacture of Writing Materials in Genoa," Economic History Review, X, (1939-40), p.134. In 1433, Basle, Heinrich Halbysen, merchant and guild master, converted a flax stamping mill, the "All Winds Mill" outside the city gates, into a paper-mill.

33. White, Jr., (1962), op. cit., p.89.

34. A. Stevenson, The Problem of the Missale Speciale, (London, 1967), pp.48-49. "The Arabs prepared their rags with a man-powered trip-hammer which rose and fell on their wet material." Library of Congress, op. cit., p.32.

35. Stevenson, op. cit., pp.48-49. "The Arabs sized their paper with a size made of rice starch or wheat starch, or by means of a gum dissolved in water and then treated it with alum, a method which does not produce a very successful sizing"..."The Chinese, on the other hand, in order to make their paper suitable for the ink they used, and I am told still use in many provinces, employed a gum or glue extracted from a special kind of lichen, the effect of which is however, inferior to that of animal glue." Gasparinetti, op. cit., p.70.

36. "There had also been considerable prejudice, from the beginning, against the paper manufactured by the Arabs, which was more economical but less durable writing material than parchment. Indeed we may say that there existed a hierarchy of materials used for writing, according to the importance of the words that were to be written on them.

For inscriptions and solemn attestations stone was used; for ordinary administrative decrees and original legal documents (atti notarili) parchment; for records (minute) of legal documents which were kept by the lawyer (notario) and for other private records, paper; for writings of little importance, which were not meant to be preserved, talbets coated with wax." The use of the latter continued until the end of the thirteenth century. Lopez, op. cit., p.135.

This tradition apparently continued in the printing of books during the fifteenth century. Certain types of paper were used to distinguish exclusiveness of particular editions. The Gutenberg edition on vellum was intentional to distinguish it from the more numerous copies on paper. A. Robison, Paper in Prints, (Washington, D.C., 1977), p.16.

Documents from a twelfth century Norman Chancery (1146) show that, "the Chancery deemed it more desirable, for the better preservation of such documents, that the old and new ordinances should be entrusted to parchment".."Restrictions placed on the use of paper, due mainly to its lack of durability, forced early Italian papermakers to improve upon their product or face the loss of the industry all together. The use of animal gelatin as size probably had the greatest effect on popularizing paper".."No restrictions as to the use of paper appear later than 1240, at which time paper was increasing in popularity and use". Gasparinetti, op. cit., pp.68-71.

"As in early times, the printers tried to imitate the manuscript books as closely as possible, so did the Basle papermakers in their early days attempt to give their paper the character of authentic parchment, to allay the prevailing distrust of the new writing material." W. Tschudin, The Ancient Papermills of Basle and Their Marks, (Holland, 1958), p.36.

37. Stevenson, op. cit., pp.278-279.

38. Ibid. C.M. Briquet also proved that early European paper was made from either hemp or linen, or a combination of both. C.M. Briquet, Briquet's Opuscula, ed. E.J. Labarre, (Holland, 1955), pp.142-155.

39. Library of Congress, op. cit., p.18.

40. Library of Congress, op. cit., p.19.

41. Lopez, op. cit., p.132.

42. Gasparinetti, op. cit., p.69.

43. Lopez, op. cit., p.133.

44. Lopez, op. cit., p.134.

45. Gasparinetti, op. cit., pp.68-69. "A number of writers who have studied the question have expressed the opinion that the Crusaders themselves had brought the art of paper-making from the Orient to the Marches. Such a view is, however, not supported by documents, in the absence of which another hypothesis may be put forward, that is, that the Arabs themselves had brought the new craft to Fabriano."

46. Lopez, op. cit., p.134. The second partnership was that of Michele Traverso of Milan and Giovanni of Sant' Olcese (a village near Genoa).

47. Lopez, op. cit., p.134. Lopez states that, "the consumption of paper in Genoa was very considerable", and assumes that as a local industry, papermaking in Genoa would have been distrusted despite the possible economic savings (not having to pay transport charges on paper shipments from the Near East).

FOOTNOTES: APPENDIX A. continued:

48. Gasparinetti, op. cit., p.69.

49. Gasparinetti, op. cit., p.78. There are no known documents relating to the foundation of the papermakers' guild. By the end of the fourteenth century, they had formed into a college, or company, with their patron saint being, St. Mary Magdalene.

50. P.G. Wilson, "A Short History of Fabriano," Zonghi's Watermarks, (Holland, 1953), pp.6-7.

51. Gasparinetti, op. cit., p.66. "Moreover, no document known to me has yet appeared to upset the tradition that Fabriano should be considered as the centre from which paper-making, perfected by new methods, spread throughout Europe."

52. Gasparinetti, op. cit., pp.72-73. The number "fifteen" derives from a study of watermarks in thirteenth and fourteenth century papers made in Fabriano. A volume of deeds attested by Matteo di Mercatuccio between August 27, 1320 and July 13, 1321, shows twenty partnership agreements and engagements of labourers or workshops "ad artem chartarum operandam et exercedam".

53. Gasparinetti, op. cit., p.73.

54. Ibid.

55. Gasparinetti, op. cit., p.78.

56. A. Zonghi, "The Ancient Papers of Fabriano," Zonghi's Watermarks, (Holland, 1953), pp.25-28.

57. Zonghi, op. cit., p.20. Among the notes mention is made of, "purchases of rags, screens or curtains (parratura?), of canvas for packing purposes, of felts and filter material."

58. Ibid.

59. Zonghi, op. cit., p.28.

60. Zonghi, op. cit., pp.25-26.

61. Zonghi, op. cit., p.27.

62. Zonghi, op. cit., p.35.

63. Zonghi, op. cit., p.22.

64. Ibid. There are at least 58 watermarks mentioned in the first book.

65. Zonghi, op. cit., p.28.

66. Ibid.

67. D. Hunter, Papermaking Through Eighteen Centuries, (New York, 1930), p.11.

68. Hunter (1930), op. cit., p.10.

69. Hunter (1930), op. cit., pp.11-12.

70. Library of Congress, op. cit., p.34. For the first three hundred hears of paper production in Basle, stampers or hammers shod with iron nails rotated in wooden vats (until the nineteenth century). Tschudin, op. cit., p.34.

71. Hunter (1930), op. cit., p.12. Concerning the disruption of the mill caused by the Italians, Stromer wrote: "In the year 1391, on the twentieth of August, I took Franz and his brother Marcus and shut them in the tower."

72. Ibid.

73. Robison, op. cit., p.20. Post-Hollander Beater paper is "brighter" due to the fermentation process being shorter. In the nineteenth century, the practise of bleaching paper resulted in a pure white product. Though there may be some question about the effects of the bleach on the paper's durability.

74. There were complaints that the Hollander made a less durable paper because it shredded the fibres as opposed to macerating them. Until 1861, the French Stamp Office insisted that all of its paper come from mills using stampers as opposed to Hollander Beaters. Library of Congress, op. cit., p.47.

75. Library of Congress, op. cit., p.47. Before the Hollander Beater, rags were left to ferment naturally and sometimes up to one third of the pulp was lost due to rotting beyond use and permanent staining from mould.

76. "Wove paper" is made from a mould that has finely woven brass wires which produce a mesh surface for making paper. The distinctive laid and chain lines, or marks, do not appear in paper made with this type of mould. A smoother surface and no line marks are characteristic of wove paper. It was introduced to Europe in the eighteenth century by an English printer, John Baskerville. Library of Congress, op. cit., pp.35-36.

77. Due to the properties of surface tension, the pulp will remain adhered to the mould until a slight pressure breaks the tension.

78. Library of Congress, op. cit., p.39.

79. The ingredients of the size mixture can have important consequences to the life of the paper. When paper is made from new linen or cotton, almost no acid is produced. In the late seventeenth century, papermakers began to use alum to

FOOTNOTES: APPENDIX A. continued:

set the size. By 1850, rosin size was used as a substitute for gelatin and animal sizes. A side product of the alum-rosin sizing process was sulphuric acid. This resulted in papers that became weak and brittle and deteriorated rapidly. Library of Congress, op. cit., p.86.

80. Library of Congress, op. cit., pp.41-42. Later on a "glazing hammer" performed this function by pounding the paper into a smoother, more uniform surface. In addition to this, a "calendar roll" (early eighteenth century) was introduced as a further perfection of the machinery for this process.

81. Zonghi, op. cit., p.18.

82. Hunter (1947), op. cit., p.115.

83. Stevenson, op. cit., pp.245-247. This information is derived from twentieth century sources and should not be used to explain how all watermarks were made. Certainly the early marks have a simplicity that implies forming by hand but as marks grew in complexity, this type of model-forming would have been useful in keeping a basic consistency throughout individual motifs.

84. A. Stevenson, "Watermarks are Twins," Studies in Bibliography, IV, (1951-52), p.65.

85. Watermarks were not used in the Orient until the twentieth century. Hunter (1947), op. cit., p.90. They were not used at all in Islamic paper. White, Jr., (1978), op. cit., pp.226-227.

86. F. de Bofarull y Sans, Animals in Watermarks, (Holland, 1959), p.10.

87. Gasparinetti, op. cit., p.72.

88. White, Jr., (1978), op. cit., pp.226-227.

89. H. Bayley, The Lost Language of Symbolism,(New York, 1951).

90. Briquet, op. cit., p.xxiv.

91. Hunter (1947), op. cit., p.261.

92. Tschudin, op. cit..

93. Library of Congress, op. cit., p.72.

94. Briquet, op. cit., p.xxxviii.

95. H. Horodisch, "On the Aesthetics of Ancient Watermarks," The Briquet Album, (Holland, 1952), p.111. Horodisch estimated that between 200- and 250,000 sheets of paper were usually made from each mould, or 500,000 per pair. (p.109)

FOOTNOTES: APPENDIX A. continued:

96. Hunter (1947), op. cit., Chapt. IX, "Watermarks".

97. Briquet, op. cit., p.xxxviii.

98. Unfortunately, many of the prints that students are apt to observe are laid down on additional sheets of paper or board, for either conservation purposes or from their original treatment by previous owners. In such cases, observations of the sheet of paper are limited to only the surface characteristics.

99. Stevenson(1967), op. cit., p.32. Books and single-sheet prints were printed in this manner.

100. Stevenson (1967), op. cit., p.249. This comment was made to Stevenson by J. Barcham Green, a twentieth century paper-mill owner in England.

101. Stevenson(1951-52), op. cit., p.68.

102. Briquet, op. cit., p.xxxviii.

103. Stevenson (1967), op. cit., p.35.

104. Stevenson (1967), op. cit., p.33.

105. Briquet, op. cit., p.xxxix. "In most periods there seems to have been such a demand on the paper-mills that there can have been little seasoning or other delay before the use of medium grades and common sizes."

106. Ibid.

107. Hunter (1947), op. cit., p.261.

108. Briquet, op. cit., pp.xxix-xl.

109. Briquet, op. cit., p.xxix.

110. Briquet, op. cit., p.xl.

APPENDIX B.

A PAPER RELIEF MADE FROM THE "MARKLE PLAQUE".

In order to give additional practical information concerning the uses of papier mâché with clay matrices, I experimented with making some relief images out of the "Markle Plaque" mould using not paper pulp, but sheet paper in the manner in which I believe the New York Public Library sealprint was made.

Cennino Cennini describes a few casting techniques but none that pertain to papier mâché. For the treatment of the matrix surface before casting is begun, he suggests greasing it with lard or animal fat. The technique he is describing utilized a stone matrix and metal foil which is laid over the surface and hammered into the recessed areas, then filled in with gesso to retain the body.(1) In the case of using papier mâché, I found that lard filled in the matrix detail and discovered that if the surface were dampened with cold water, this would enable the paper to be pulled away from the matrix without tearing or sticking to the surface. I used square shaped sheets of fine paper (tissue paper used for packing shoes) and the paste was a cold water starch paste (wallpapering paste).

After wetting the matrix, a single layer of tissue paper was immersed in the paste and folded over once to increase the thickness. This was laid down from right to left on the matrix, pressing on the paper as it was laid down, in order to avoid air pockets and tearing at the recessed edges of the mould (Figs. 232 and 233). If the paper was laid flat over the incised surface and then pressed with the

fingers into the hollow design beneath, the paper only tore and did not fill the matrix evenly. Folds and edges were avoided in deeply recessed areas, such as, the Virgin's head and the Child's head, because they tended to show up in the finished relief image, distorting the surface and details in the design (Fig. 234). These layers of doubled tissue paper were repeated along with constant pressure from the fingers forcing the damp material into the finest details, especially in the area of the lettering (Fig. 235). Five to eight layers of doubled paper were used over the entire surface of the matrix. When the cast was opaque and white, meaning it was thick enough to retain its shape, the edges of the paper were folded and moulded onto the surface (Fig. 236). This folding over gave a rounded edge which was then held by the fingers and pulled across the surface, lifting the paper relief out of the matrix as this was done. The back of the relief remained concave. Three casts were made in thirty minutes (Figs. 237 to 239). They were then left to dry on sheets of loose paper. As a result of not being attached to a firm support, the forms wrinkled and curled up at the edges. When one example was cut with scissors, layers of paper could be seen in the cross-section, very similar to the description of the layers of paper seen in sections of the New York Public Library sealprint. One paper relief made from the "Markle Plaque" was painted to look like those papier mâché roundels found in the abbey at Wienhausen (Fig. 240).

I might note here, that the first method attempted in this experiment, used a mass of paper dampened in starch paste. This was pressed into the wet matrix and backed with pieces of paper covered in paste. When the mass was semi-dry

(tacky), an attempt was made to pull it out of the matrix. It only separated from the paper sheets behind it and lost its form. The layering method described above was the only process of the two through which an image could be pulled freely and in one piece from the matrix.

The one reference made in this section is to:

1. Cennino Cennini, The Craftsman's Handbook, trans. D.V. Thompson, Jr., (New York, 1960), p.78.

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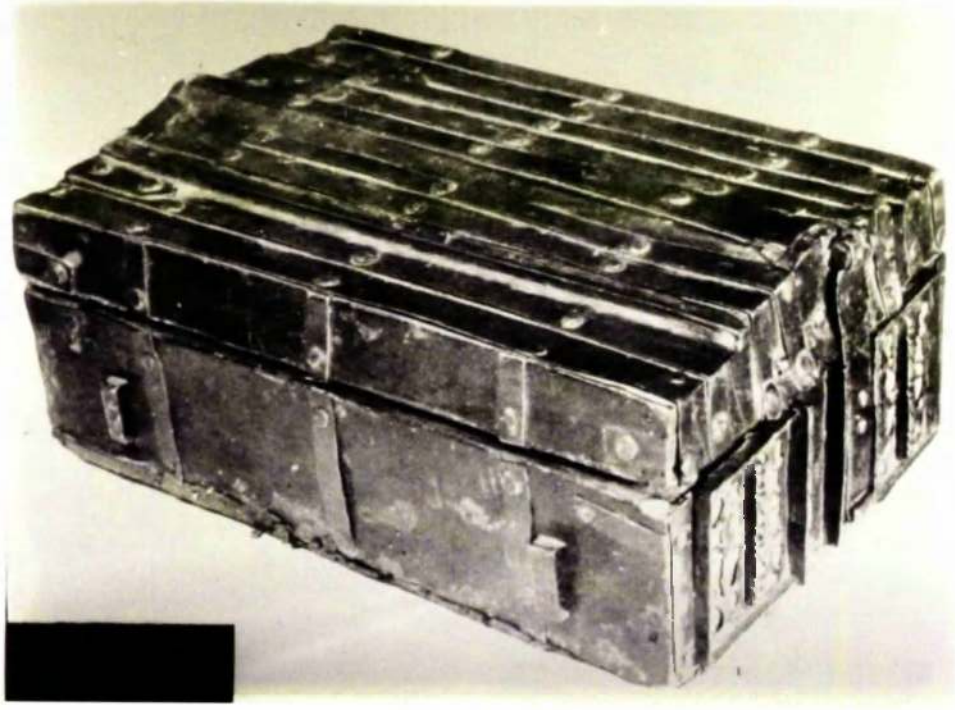
——— by ———

Cynthia L. Bowman

VOLUME II

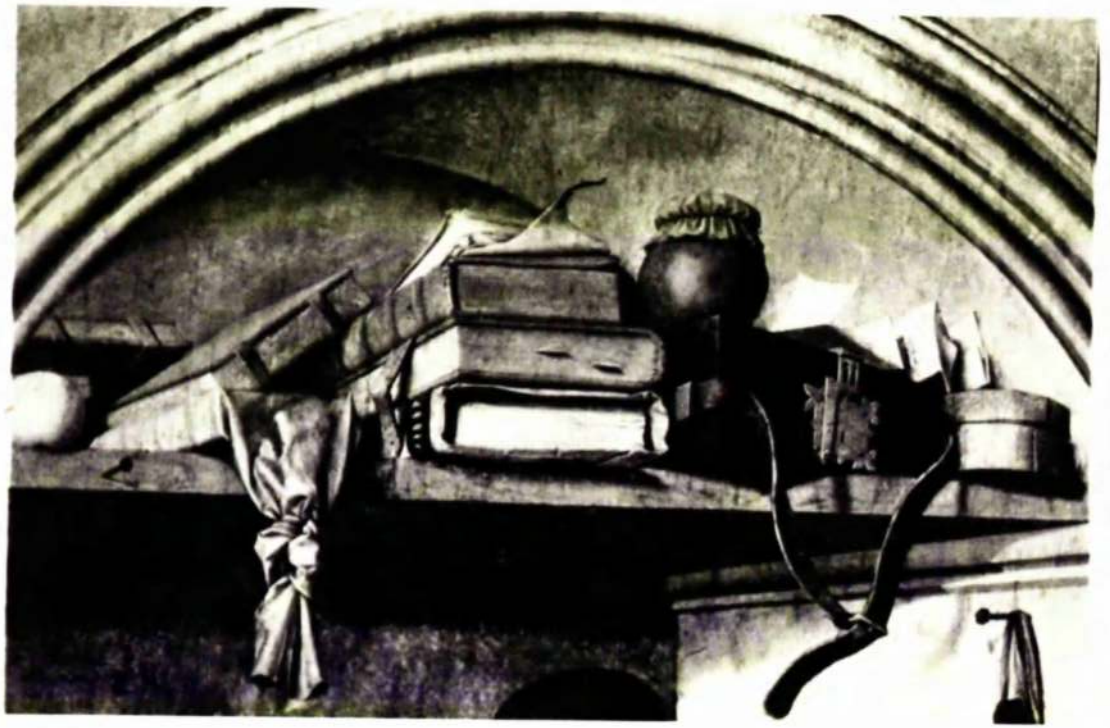
ILLUSTRATIONS



(Fig. 1) The Spencer Cofferet, French, Wooden box with leather and iron decoration, 15th c., 292:197:108 mm.

(Fig. 2) Cofferet shown in Figure 1, open.

(Fig. 3) The Almighty Enthroned, Paris, Coloured woodcut print, 1481, 247:156 mm.

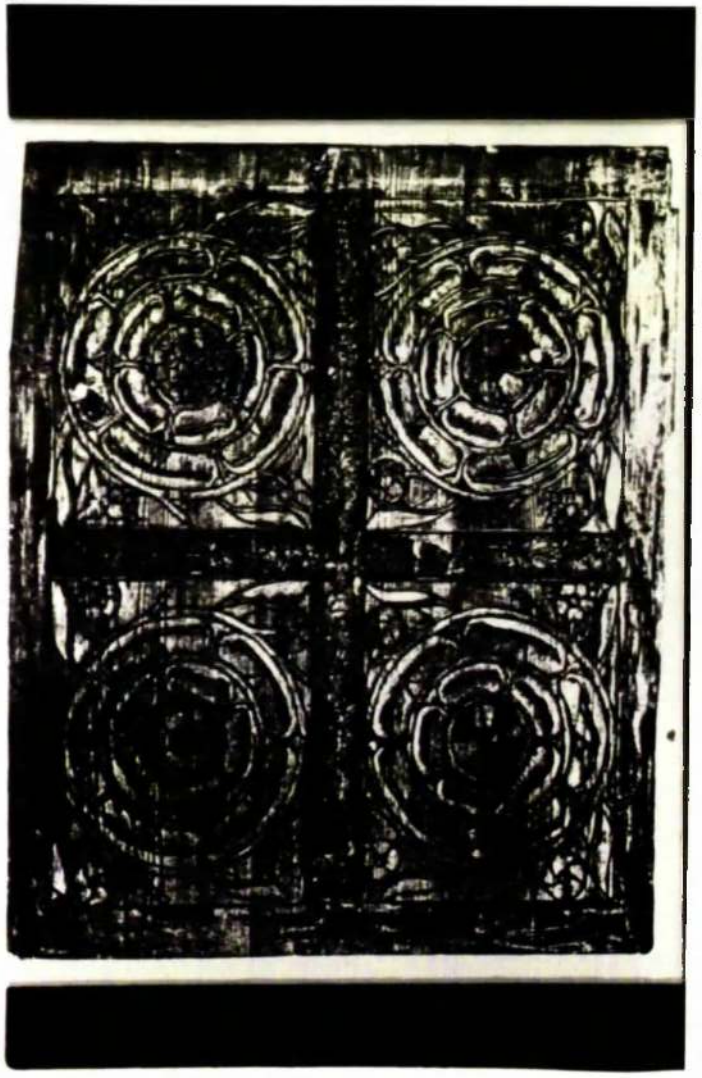


(Fig. 5) Detail from Figure 4, showing cofferet on shelf.

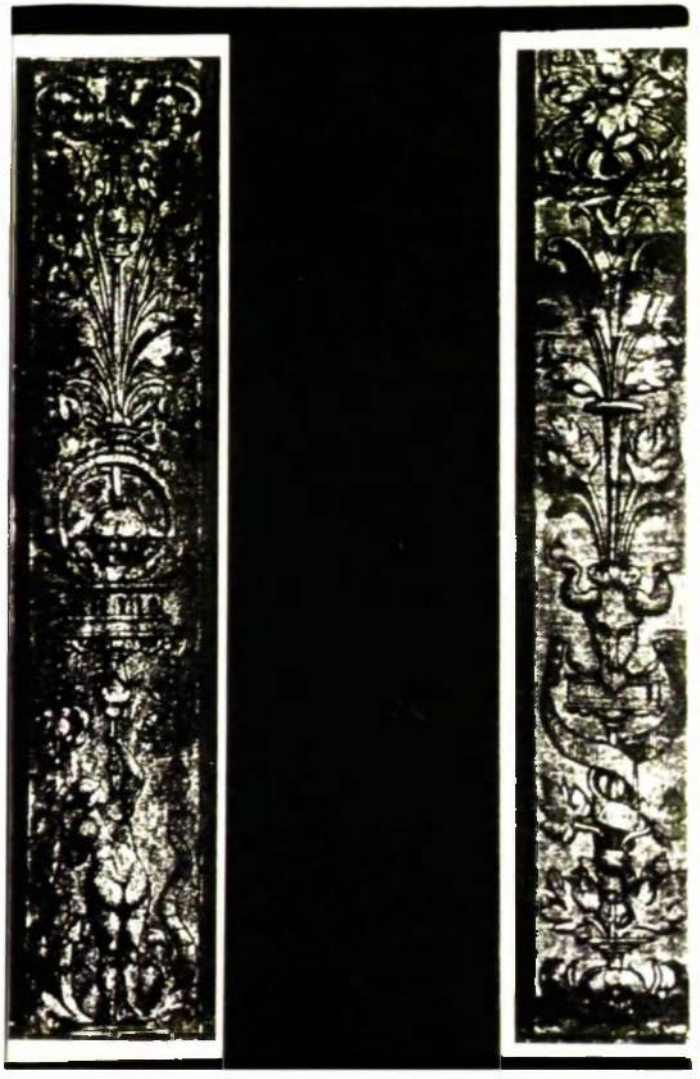
(Fig. 4) The Prophet Jeremiah, Master of the "Annunciation" from Aix, Oil painting on wood, 1443-45, 1520:860 mm.

(Fig. 6) St. Francis, French, Coloured woodcut print, 15th c., approx. 240:200 mm.

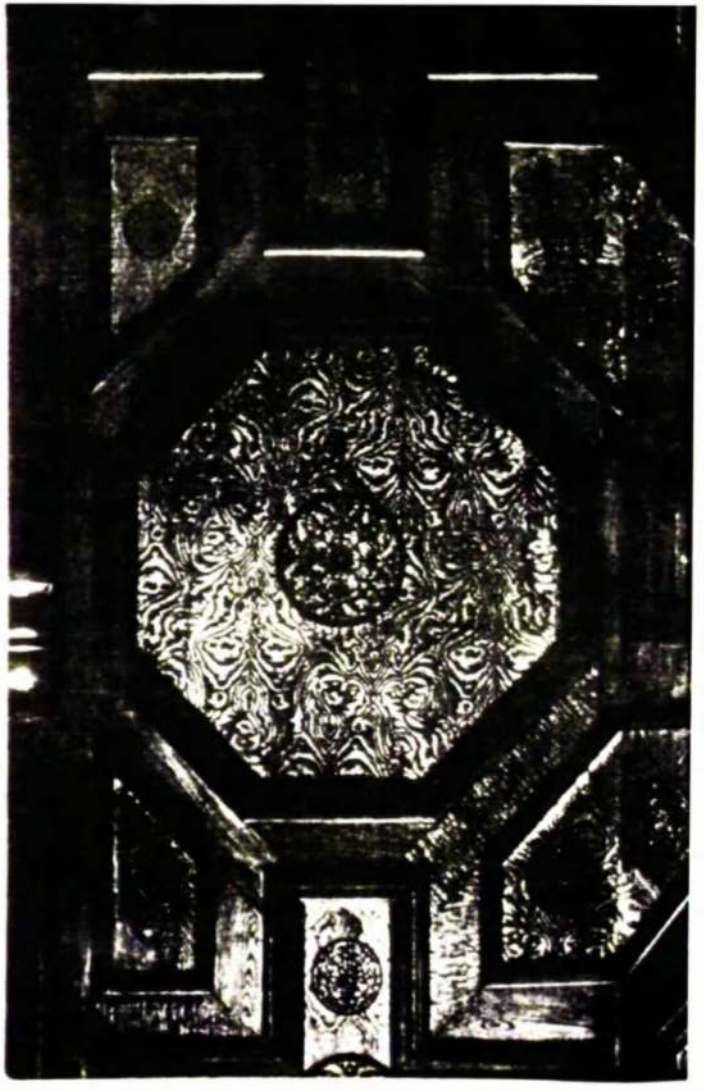
(Fig. 7) The Nativity, French, Coloured woodcut print, 15th c., 240:200 mm.



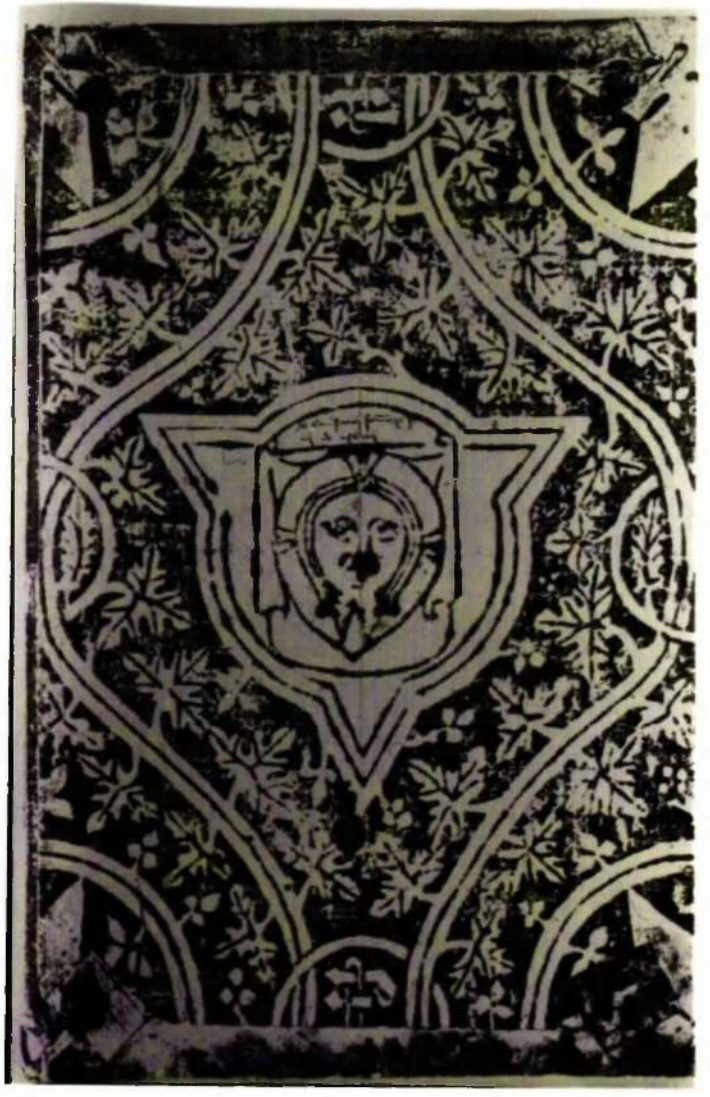
(Fig. 8) Ceiling Decoration, Swiss, Woodcut print, ca. 1500-25.



(Fig. 9) Detail from Figure 8, showing border patterns.

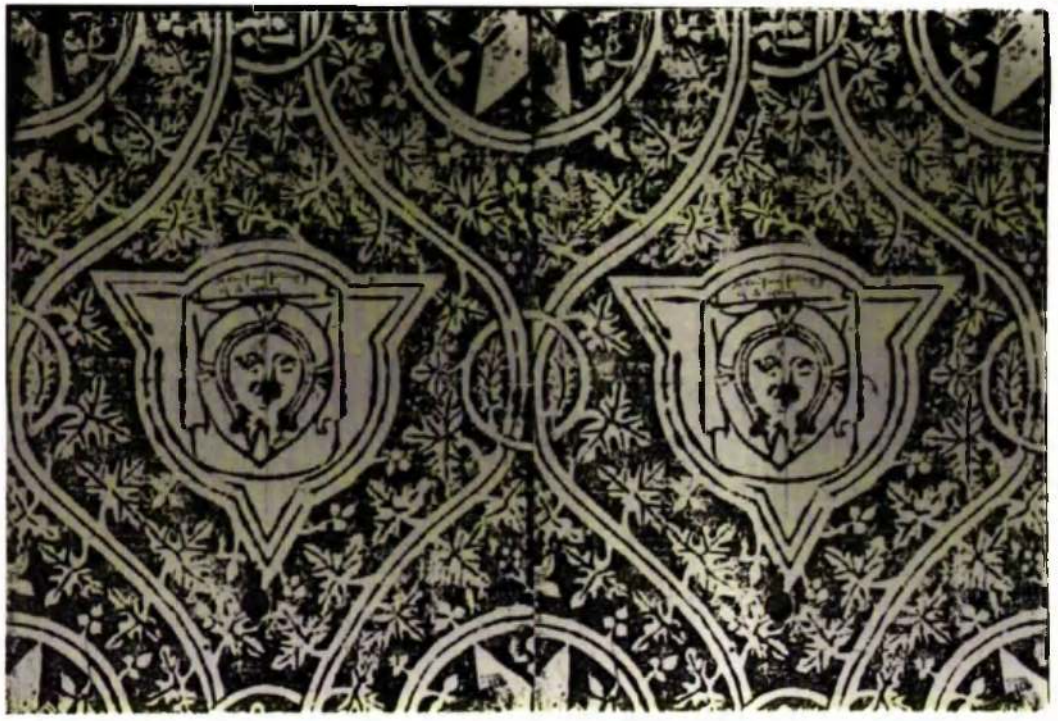


(Fig. 10) Ceiling Decoration Imitating Intarsia Work, Swiss, Woodcut print, ca. 1550-1600.



(Fig. 11) Face of Christ on Abstract Pattern, Polish, Woodcut print, ca. 1500, 298:213 mm.

(Fig. 12) Marriage at Cana, Tirolian, Lectern Cloth, ca. 1400, 1210:860 mm.



(Fig. 13) Woodcut print shown in Figure 11, doubled.

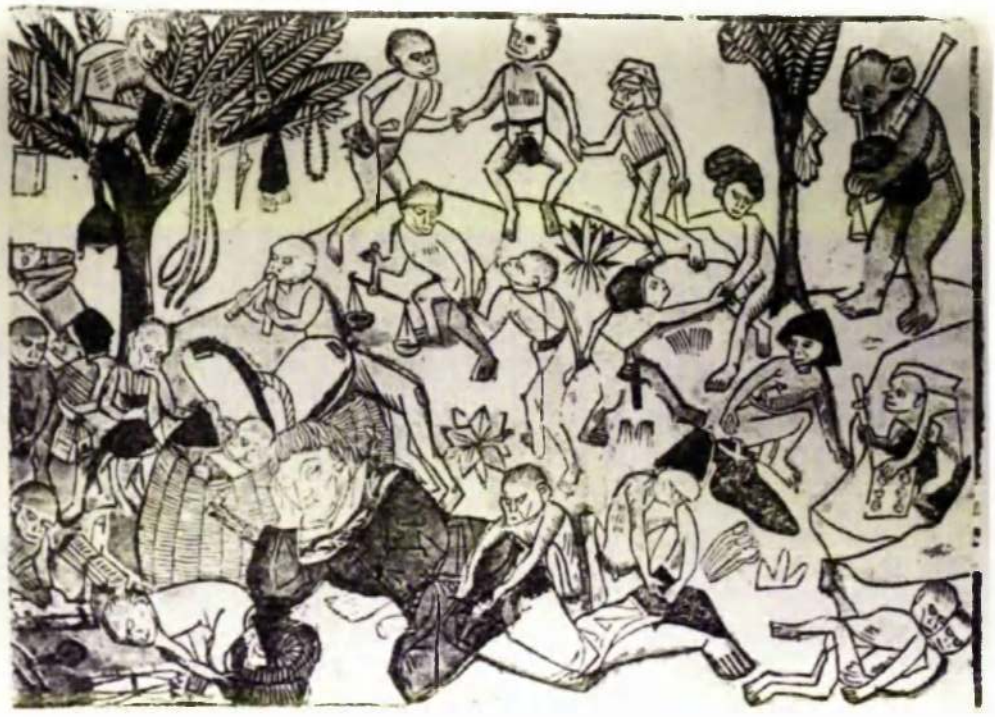
(Fig. 14) The White Eagle and Crown of Poland, Polish, Woodcut print, ca. 1450, S.[IX. 2029m], 371:290 mm.

(Fig. 15) Publisher's Decorated Wrapper, Augsburg, Woodcut print, 1494, 270:192 mm.

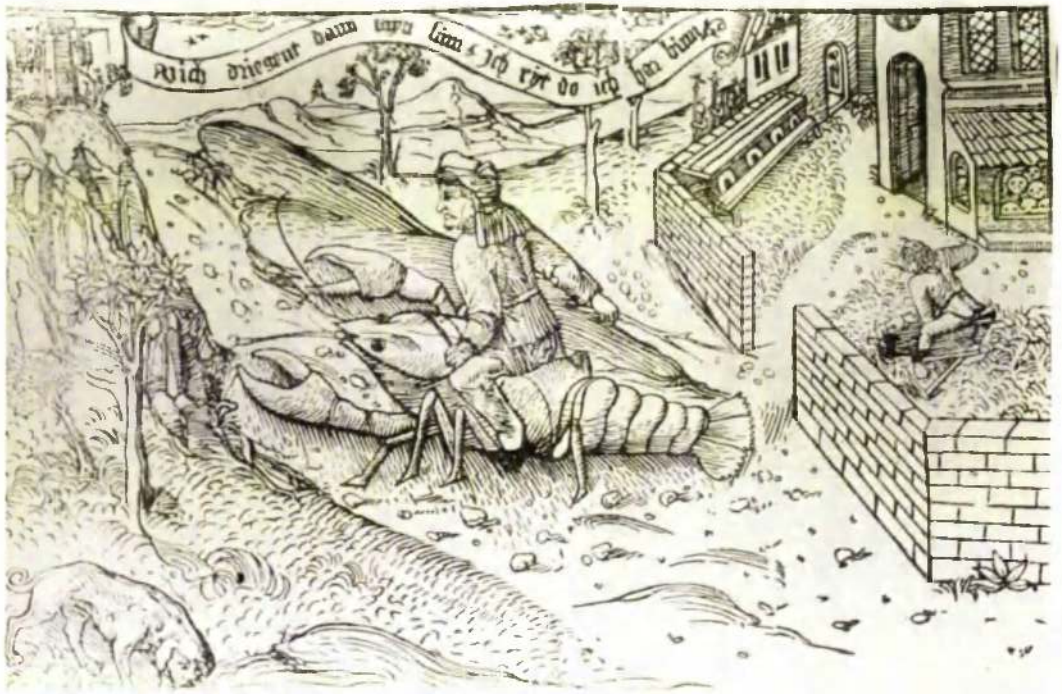
(Fig. 16) St. George, Publisher's Decorated Wrapper, Ferrara, Woodcut print, ca. 1500, 214:145 mm.

(Fig. 17) New Year's Greeting, Basel, Coloured woodcut print, ca. 1465, S.783, 177:128 mm.

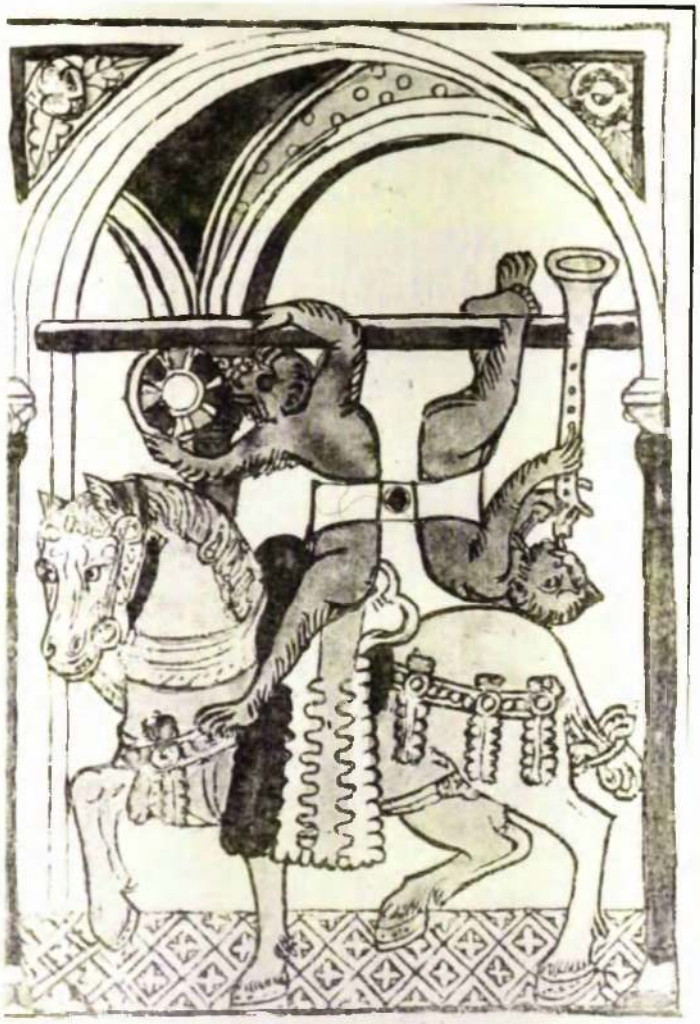
(Fig. 18) Astrological Blood-letting Calendar, Strasbourg, Woodcut print, ca. 1498, S.*1925c, 127:210 mm.



(Fig. 19) The Sleeping Tinker and Monkeys, Swabian, Coloured woodcut print, ca. 1480-90, S.1925, 266:370(?) mm.



(Fig. 20) Man Riding a Lobster, Swabian, Coloured woodcut print, ca. 1500, (no Schreiber number), 173:264 mm.



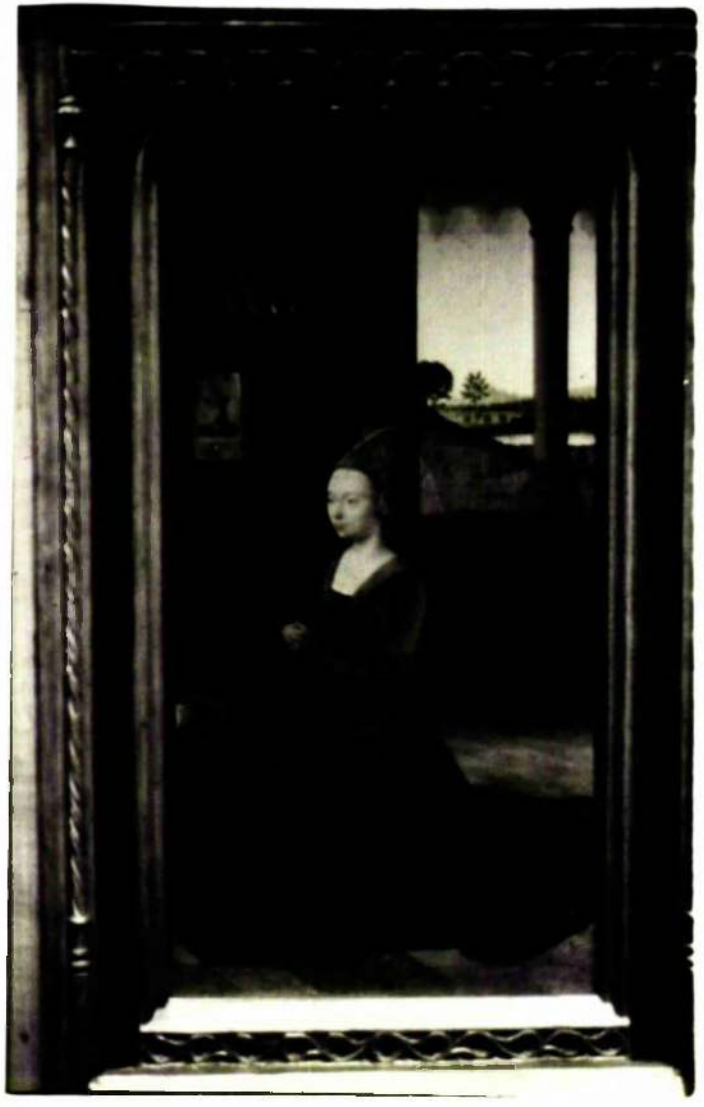
(Fig. 21) Two Monkeys on Horseback, South German, Coloured woodcut print, ca. 1440-50, (no Schreiber number), 268:186 mm.

(Fig. 22) The Christ Child and Mary, Northern Germany, Miniature on parchment, ca. 1250, 90:76 mm.

(Fig. 23) The Entombment, Wienhausen, Miniature on parchment, ca. 1330, 78 mm diameter.

(Fig. 24) St. Alexander and St. Bartholomew, Wienhausen(?), Coloured feather drawing, End of 14th c., 138:98 mm.

(Fig. 25) St. Sebastian with Antiphon, Upper Rhine, Woodcut print, ca. 1440-60, S.*1676c, 288:195 mm.



(Fig. 26) Donor's Wife, Petrus Christus, Oil painting on wood, 1455.

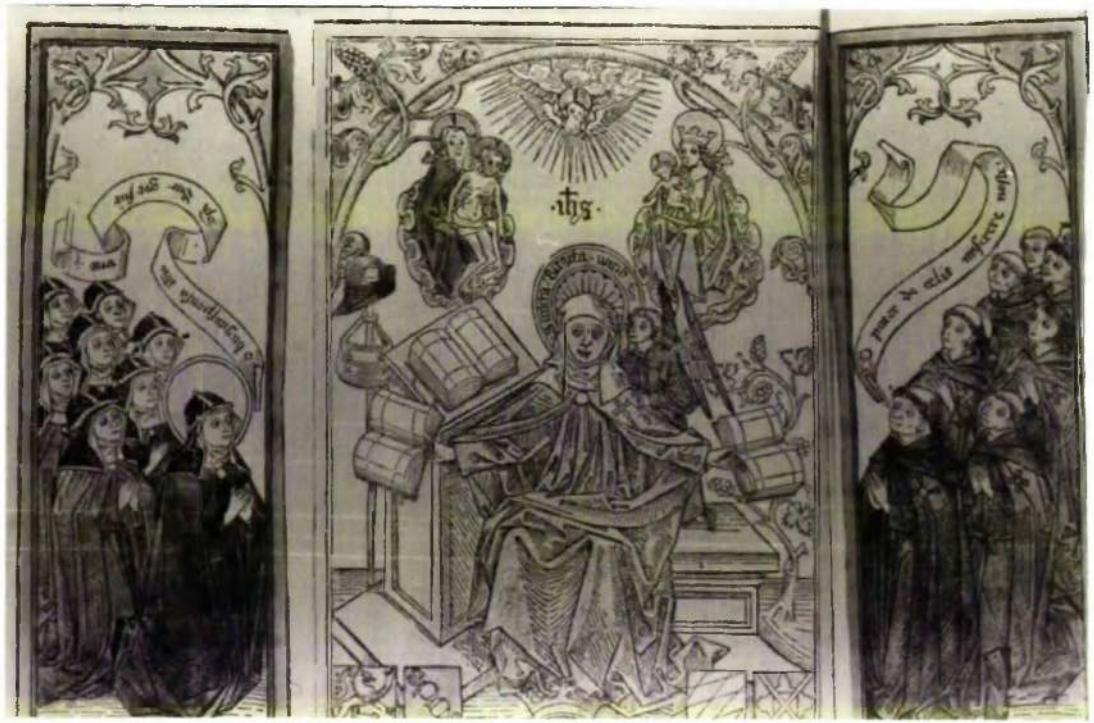
(Fig. 27) Detail from Figure 26, showing woodcut print of St. Elizabeth of Hungary.

(Fig. 28) St. Florian, Regensburg, Coloured woodcut print, ca. 1460, S.*1421a, 250:163 mm.

(Fig. 29) St. Bridget, South German, Coloured woodcut print, ca. 1450-60, S.1287, 175:122 mm.

(Fig. 30) St. Bridget, South German, Coloured woodcut print, 15th c., S.1289, 150:205 mm.

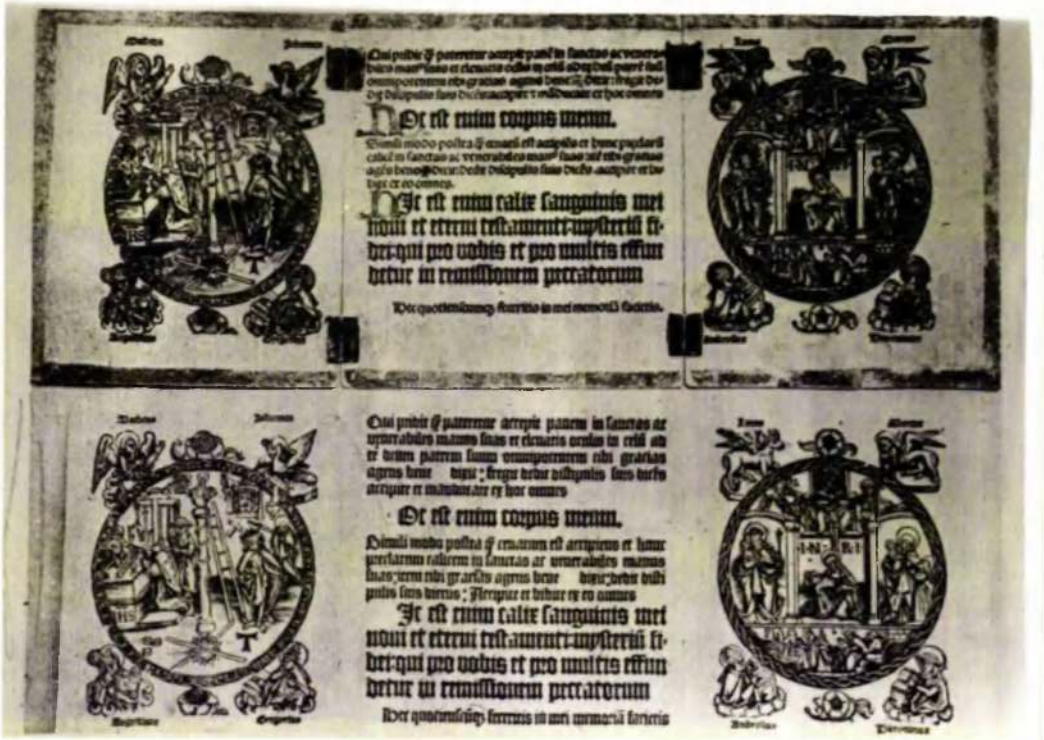
(Fig. 31) St. Bridget, Nürnberg, Coloured woodcut print, ca. 1480, S.1290, 178:138 mm.



(Fig. 33) St. Bridget with Nuns and Monks, Maihingen, Coloured woodcut print, ca. 1480-1500, S.1283, 265:97 mm; 265:187 mm; 266:93 mm.

(Fig. 32) St. Bridget, Augsburg, Coloured woodcut print, ca. 1480-1500, S.1293(=1294), 124:82 mm.

(Fig. 34) St. Bridget, Augsburg, Coloured woodcut print, ca. 1490, S.1293a, 127:85 mm.

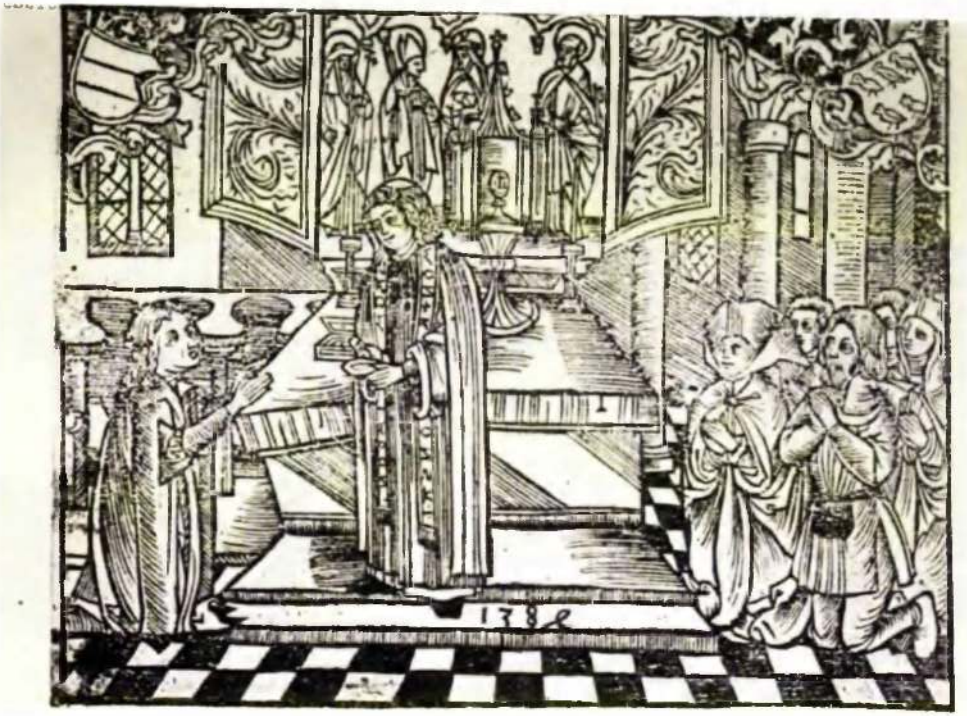


(Fig. 35) Printed Portable Altarpiece, Leipzig, Coloured woodcut prints, Early 16th c., S.1841, 138:356 mm.

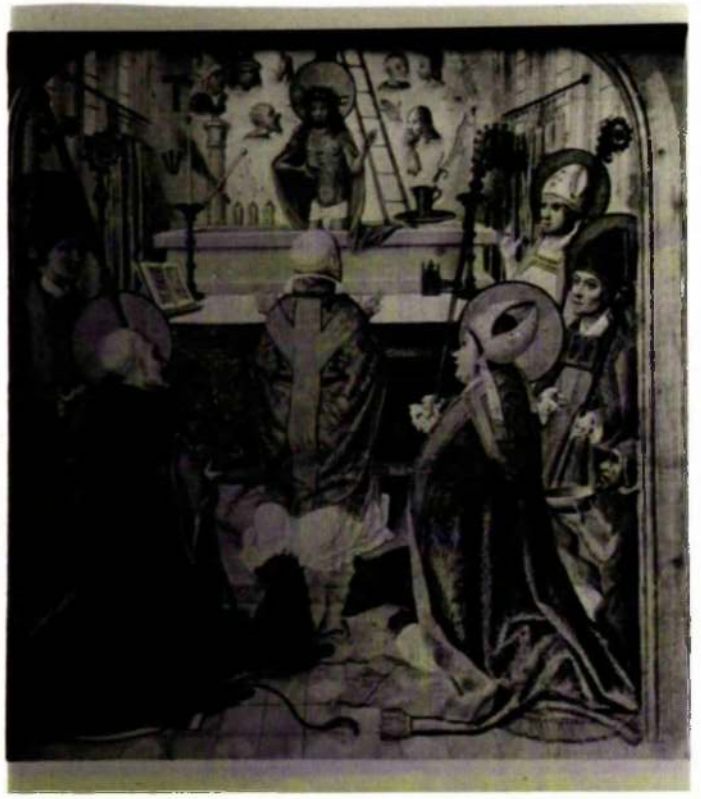
(Fig. 36) Portable Altarpiece, French, Wooden box with leather decoration, Early 16th c..

(Fig. 37) Transportation of the Virgin's House to Loreto, Savoy, Coloured woodcut print, 1494, S.[IX. 1942z], 331:214 mm.

(Fig. 38) The Madonna of Loreto, Italian, Woodcut print, 15th c., S.1104, 203:151 mm.



(Fig. 39) Miracle at Seefeld, South German, Woodcut print, Late 15th c., S.1943, 133:176 mm.



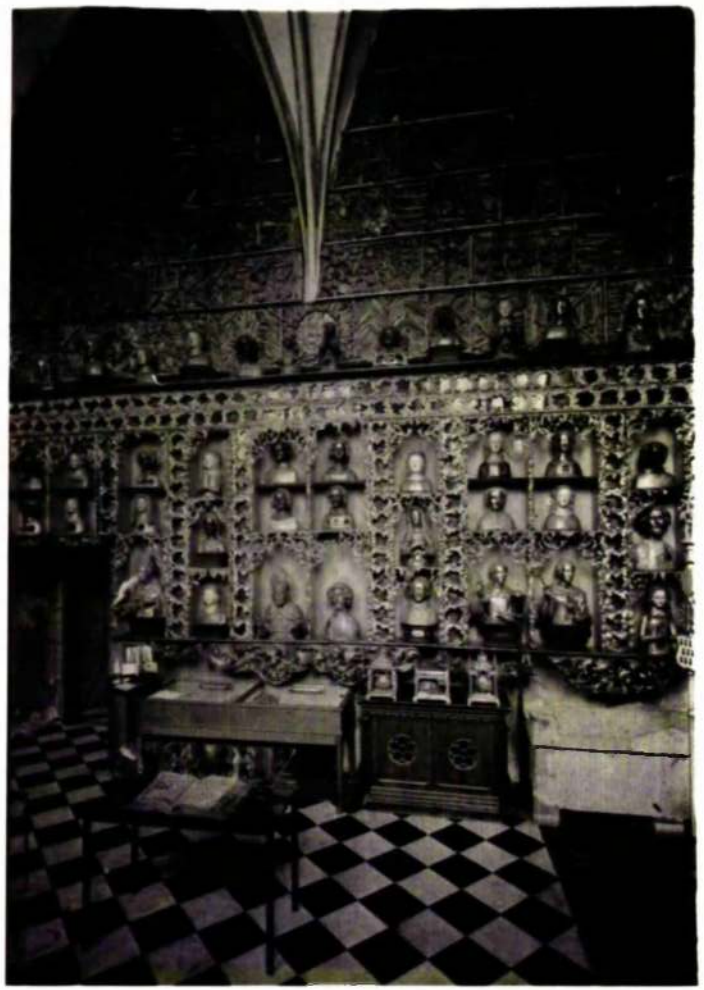
(Fig. 40) The Mass of St. Gregory, Master of St. Severin, Tempera on silk, 1510-1515.

(Fig. 41) Christ as the Man of Sorrows, South German, Coloured woodcut print, 1430-40, S.[IX. 860a], 197:137 mm.

(Fig. 42) The Mass of St. Gregory, Swabian, Coloured woodcut print, ca. 1470, S.1472a, 178:132 mm.

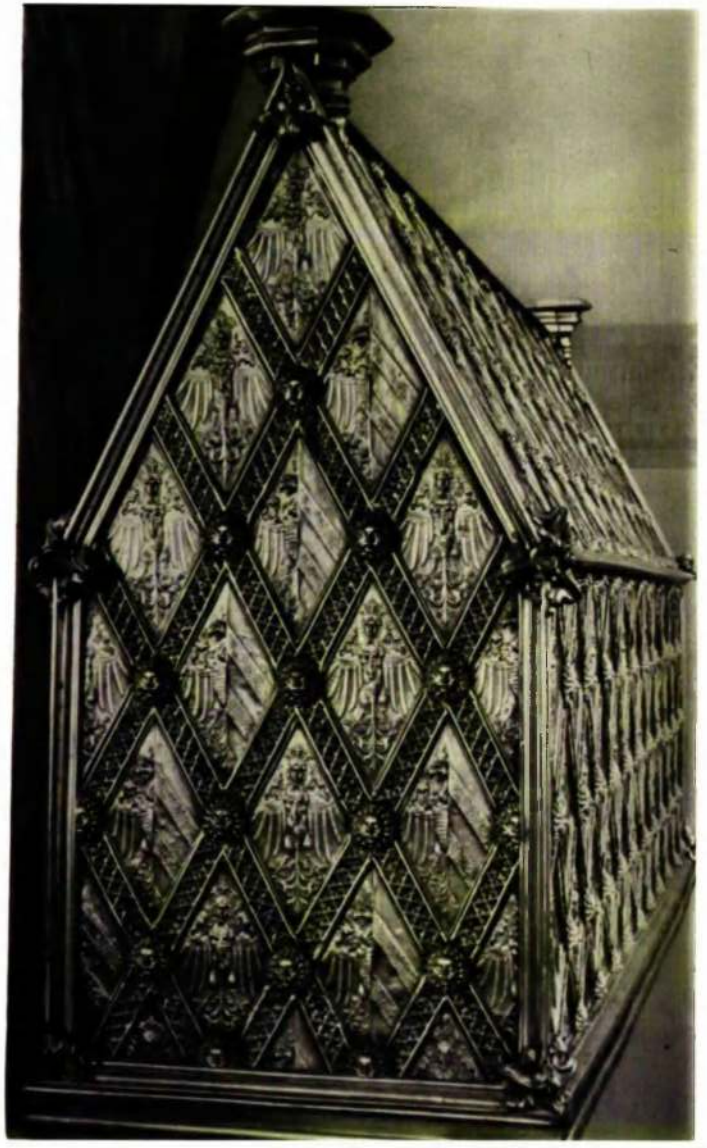
(Fig. 43) The Mass of St. Gregory, Swabian, Coloured woodcut print, ca. 1470-80, S.1469, 190:140 mm.

(Fig. 44) The Mass of St. Gregory, Paris, Coloured woodcut print, ca. 1490, S.*1463a, 233:168 mm.



(Fig. 45) The Goldene Kammer, St. Ursula's, Cologne.

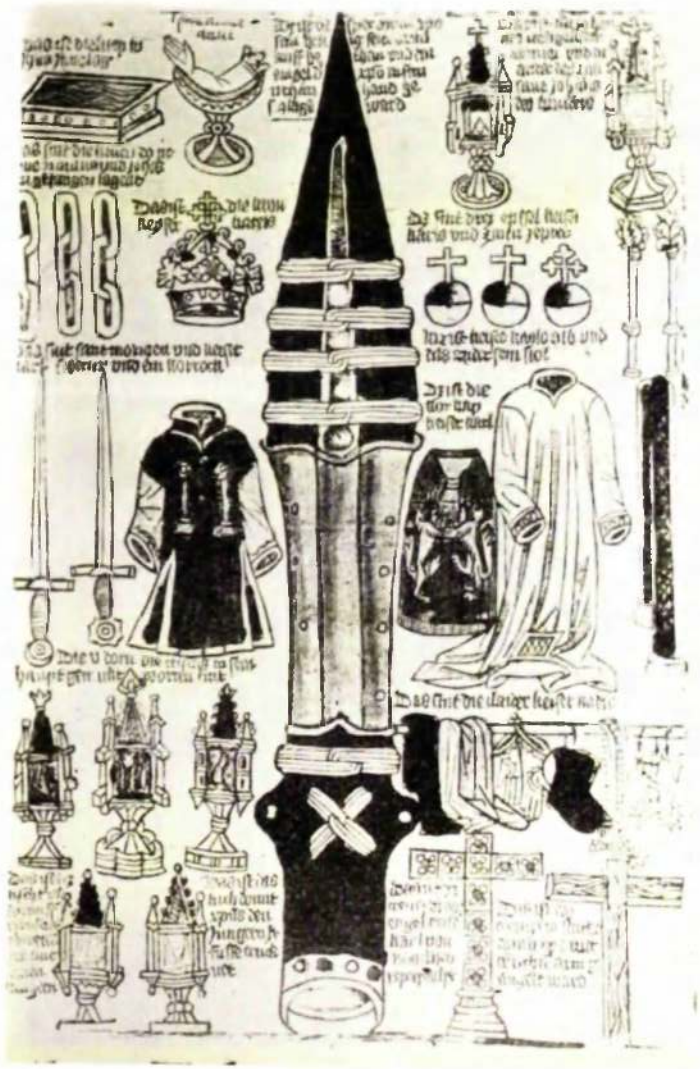
(Fig. 46) Reliquary of St. Margaret, French, Copper gilt, crystal, amethyst, and glass, 13th c..



(Fig. 47) Reliquary of the Nürnberg Relics, Nürnberg, Silver gilt on an oak frame, 1438-40.

(Fig. 48) Reliquary Case, Foot of St. Margaret, French, Tooled and embossed leather with painting, 14th c..

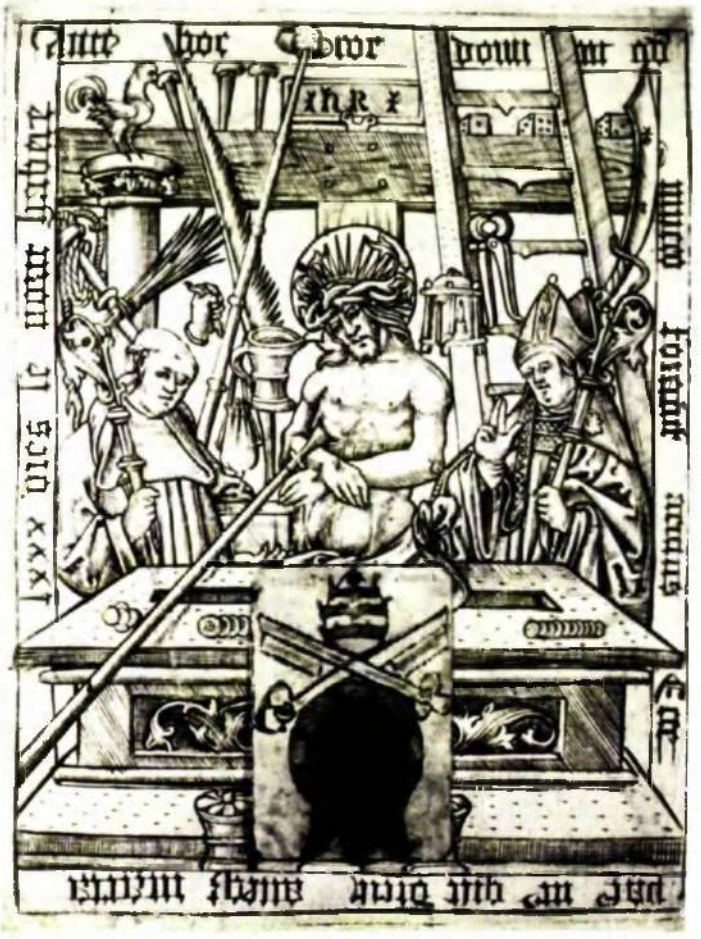
(Fig. 49) Reliquary Bust of St. Ursula, Cologne, Wood with painting, 14th (?) c..



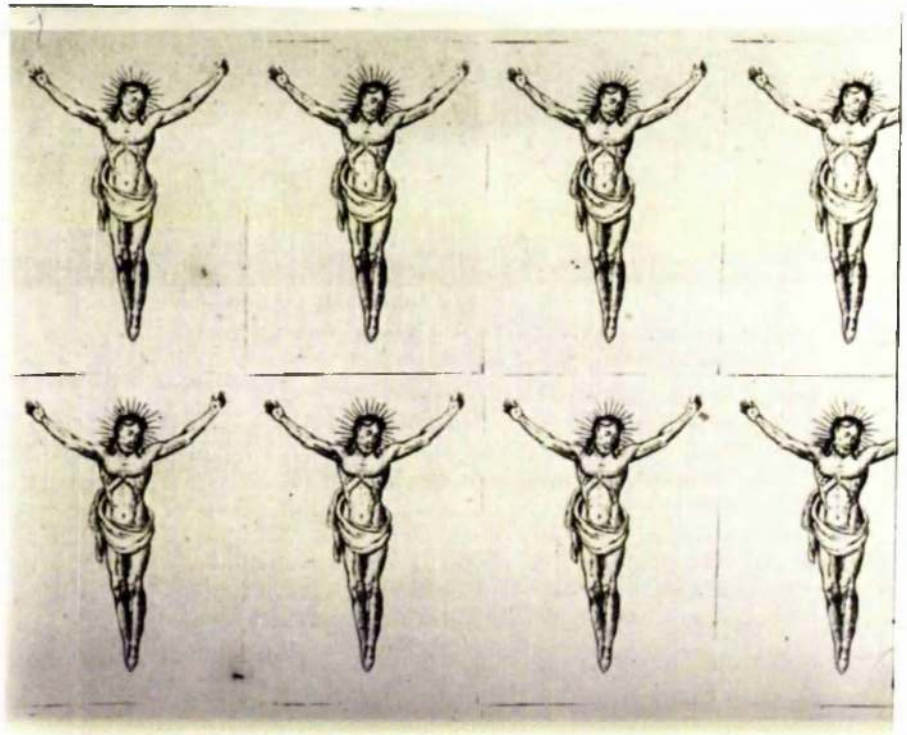
(Fig. 50) The Nürnberg Relics, Nürnberg, Coloured woodcut print, 1470-80, S.1942a, 536:300 mm.

(Fig. 51) Angel Holding a Cloth with the Holy Heart, Nürnberg, Coloured woodcut print, 1480-90, S.1799, 71:59 mm.

(Fig. 52) Angel Holding a Cloth with the Holy Heart, Nürnberg, Coloured woodcut print, 1480, S.[IX. 1793c], 80:61 mm.



(Fig. 53) Indulgence Image, Master "S", Engraving, ca. 1505, 114:89 mm.



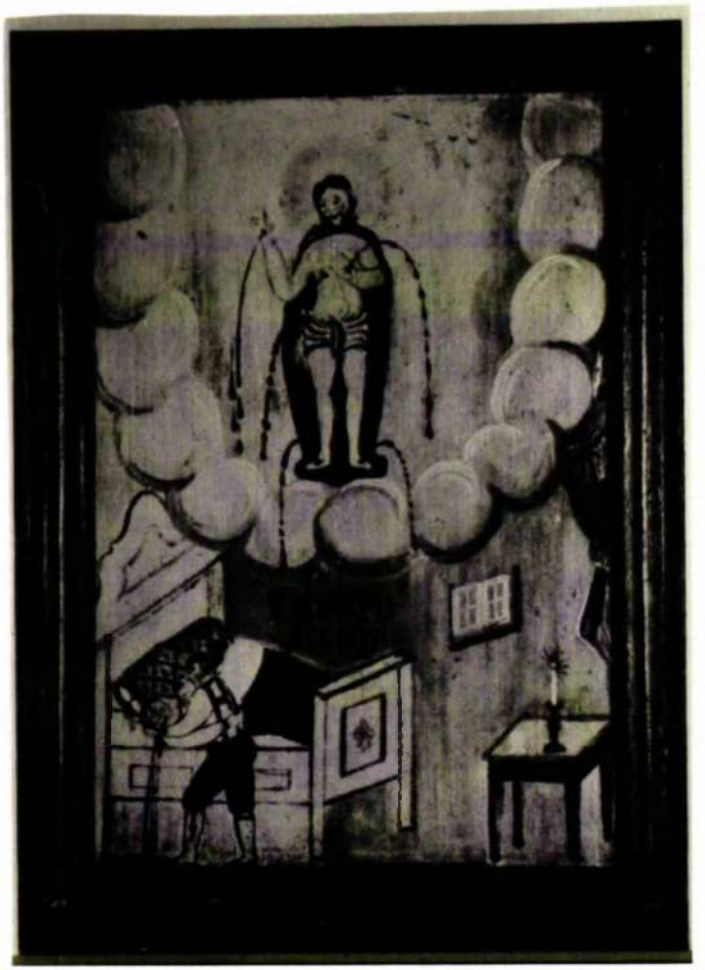
(Fig. 54) Christ Crucified, Lithographs, 19th c..

(Fig. 55) Hand of God, German, Woodcut print, ca. 1450, (no Schreiber number), 195:136 mm.

(Fig. 56) Pilgrimage Scene at Nonnenweiler, South German, Coloured woodcut print, Late 15th c., S.1582, 138:187 mm.

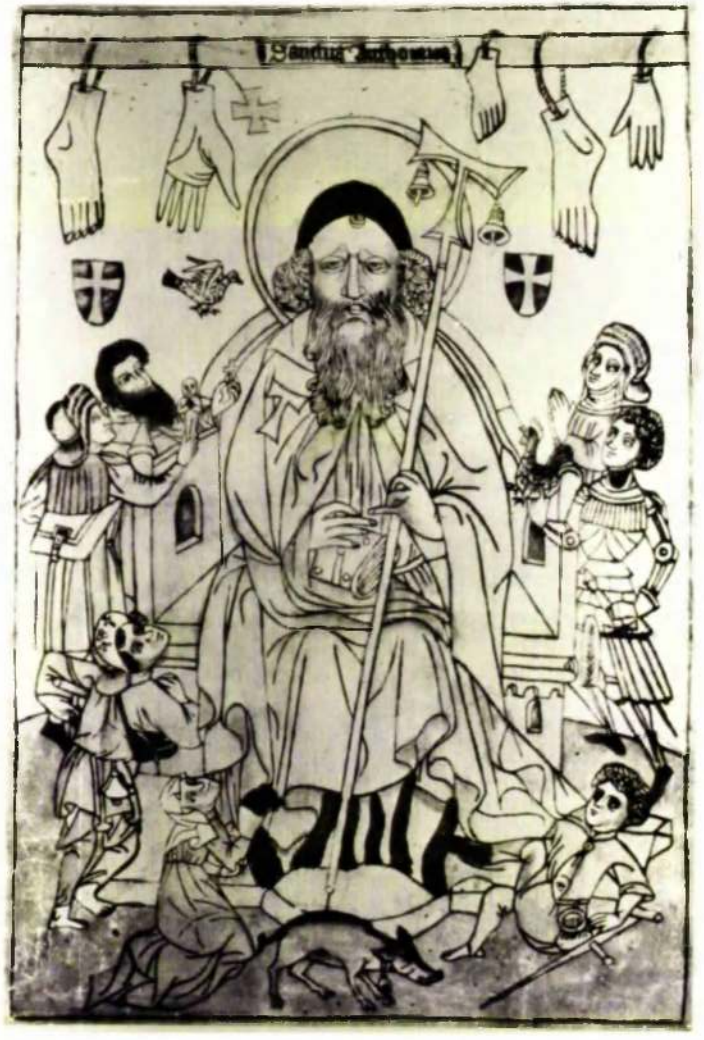
(Fig. 57) St. Wolfgang, Regensburg, Coloured woodcut print, ca. 1460, S.*1733a, 250:163 mm.

(Fig. 58) St. Marinus and St. Anianus Blessing the Congregation, Hans Mair von Landshut, Freising, Oil painting on wood panel, 1483.

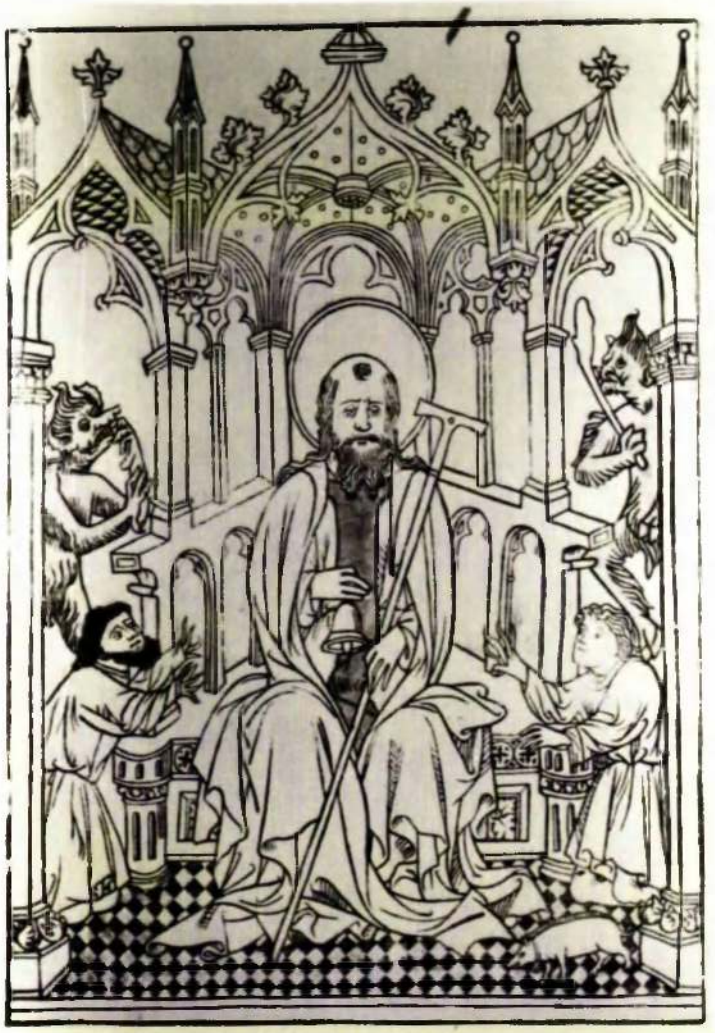


(Fig. 59) Ex-voto Painting, Bavaria, Oil painting on wood, 1820, 306:299 mm.

(Fig. 60) Ex-voto Painting, German, Oil painting on wood, 1756, 350:259 mm.



(Fig. 61) St. Anthony the Hermit, Swabian, Coloured woodcut print, ca. 1440-50, S.1215, 376:256 mm.

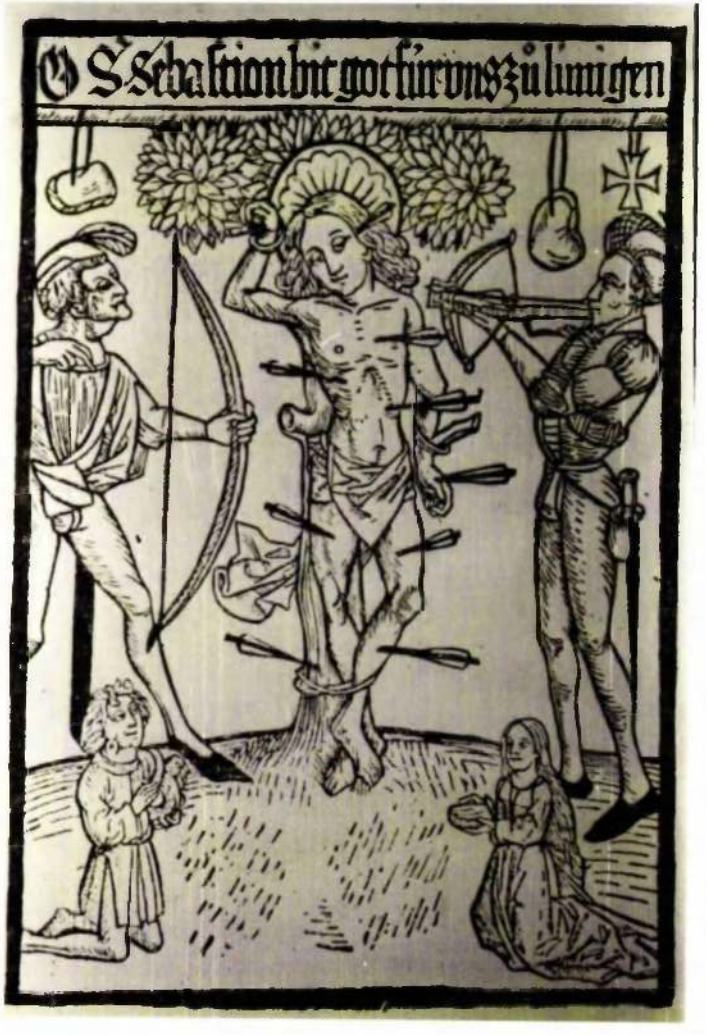


(Fig. 62) St. Anthony the Hermit, Constance, Coloured woodcut print, ca. 1430-50, S.1218, 270:191 mm.

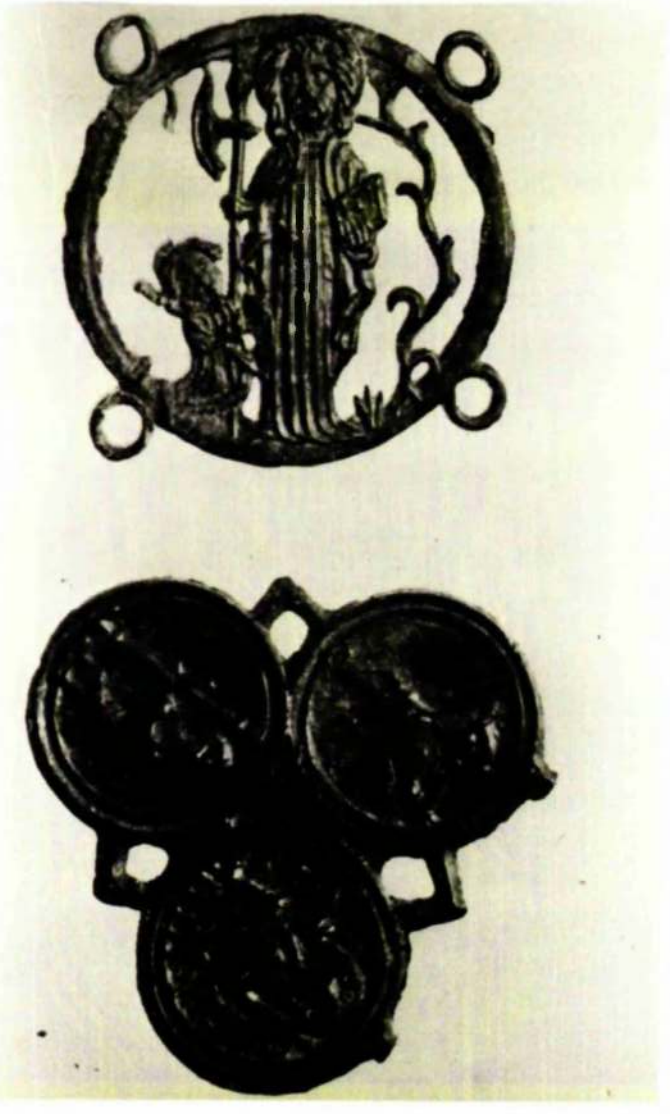
(Fig. 63) St. Valentine at Rufach, Alsace, Woodcut print, ca. 1480, (no Schreiber number), 157:135 mm.

(Fig. 64) St. Valentine at Rufach, Alsace,
Woodcut print, ca. 1480-1500, S.1717, 126:91 mm.

(Fig. 65) St. Valentine at Rufach, German,
Woodcut print, Early 16th c., S.1717a, 122:85 mm.



(Fig. 66) St. Sebastian at Lüningen, German, Woodcut print, ca. 1500, S.1688, 190:132 mm.



(Fig. 67) St. Mathew and a Pilgrim and The Three Miraculous Hosts, Metal pilgrim-badges, Trier, 1450, and Wilsnack, 1400.

(Fig. 68) Saints Restoring a Child to Life, Thierry Bouts, Oil painting on wood, 15th c..

(Fig. 69) Holy Water Flask, St. Thomas' Canterbury, Metal pilgrim-badge, 13th c..

(Fig. 70) Holy Water Flask, Metal pilgrim-badge, 13th c..

(Fig. 71) Scallop, Metal pilgrim-badge, 14th c..

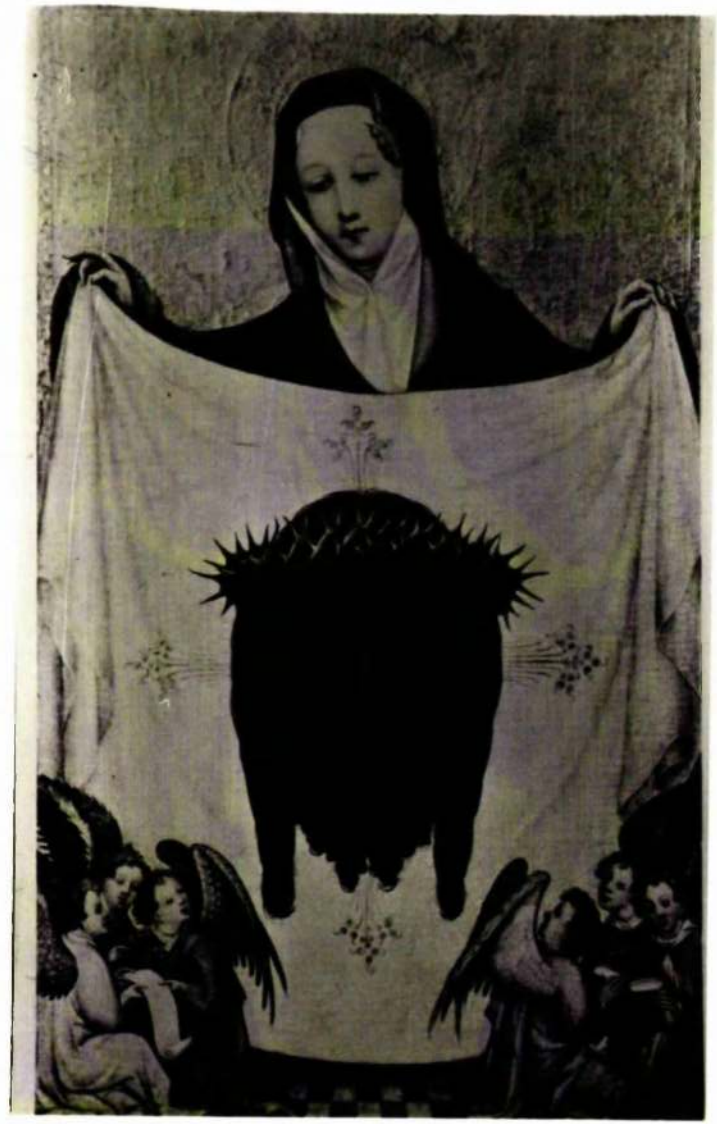
(Fig. 72) The Virgin and Child, Metal pilgrim-badge, 14th c..

(Fig. 73) Holy Water Flask, Lourdes, Plastic, 20th c..

(Fig. 74) Face of Christ, Wienhausen, Painted eight times on one piece of parchment, ca. 1500, about 45:38 mm each.

(Fig. 75) Angel Holding the Sudarium, Wienhausen, Painting on leather, ca. 1500, 78:42 mm.

(Fig. 76) St. Veronica Holding the Sudarium, Master of St. Veronica, Oil painting, First quarter 15th c., 442:337 mm.



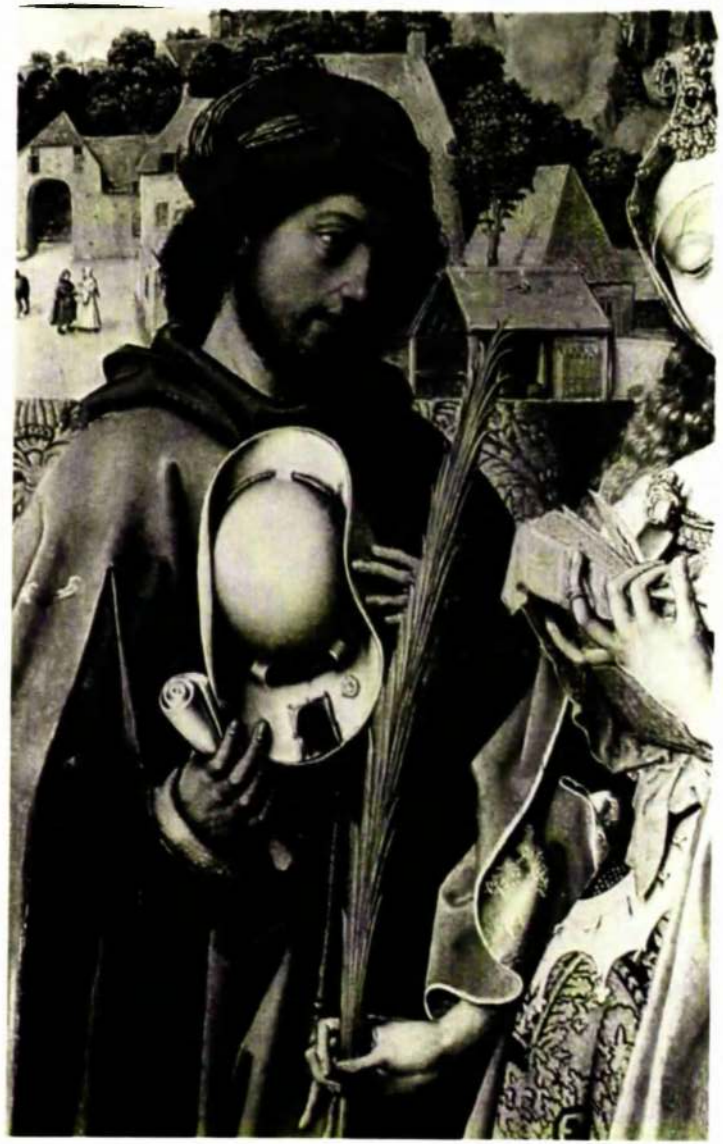
(Fig. 77) St. Veronica Holding the Sudarium, Master of St. Veronica, Oil painting, First quarter 15th c.,

(Fig. 78) St. Elizabeth Giving Shelter to Pilgrims, Cologne, Oil painting, ca. 1380-90.

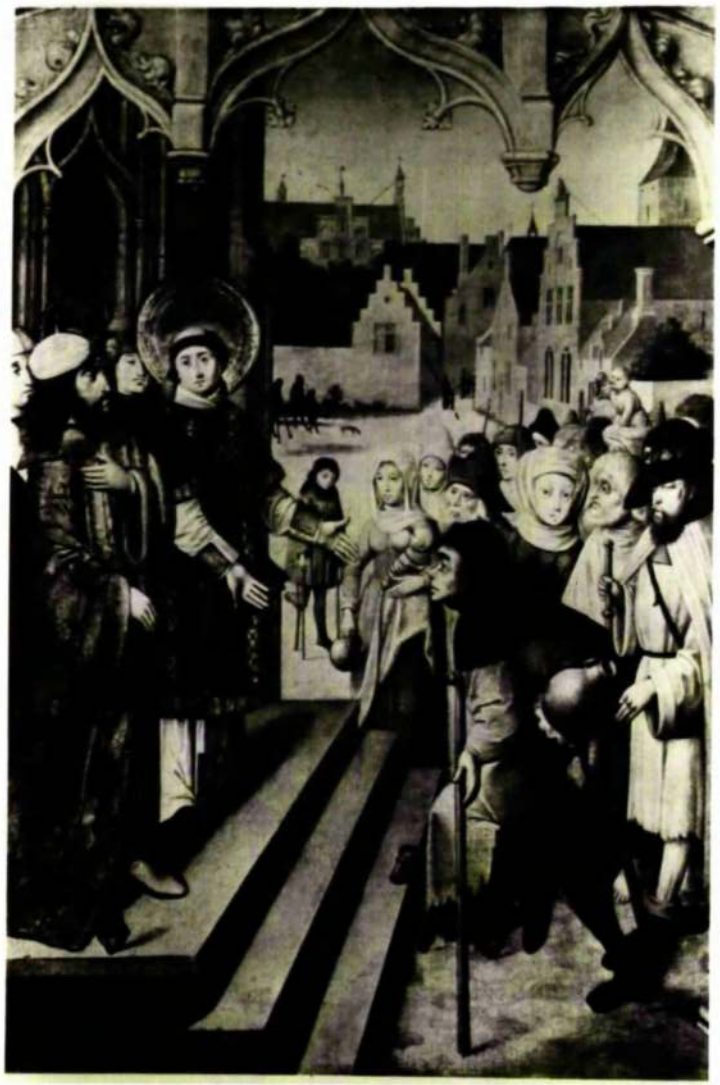
(Fig. 79) Detail from Figure 78, showing pilgrim wearing Holy Face pilgrim-badge.

(Fig. 80) Christ at the House of Emmaus, Cologne, Oil painting, ca. 1460, (Detail of pilgrim standing to the right in this scene).

(Fig. 81) Head of a Pilgrim (St. James?), Master of the St. Bartholomew Altarpiece, Oil painting, Cologne, ca. 1470.

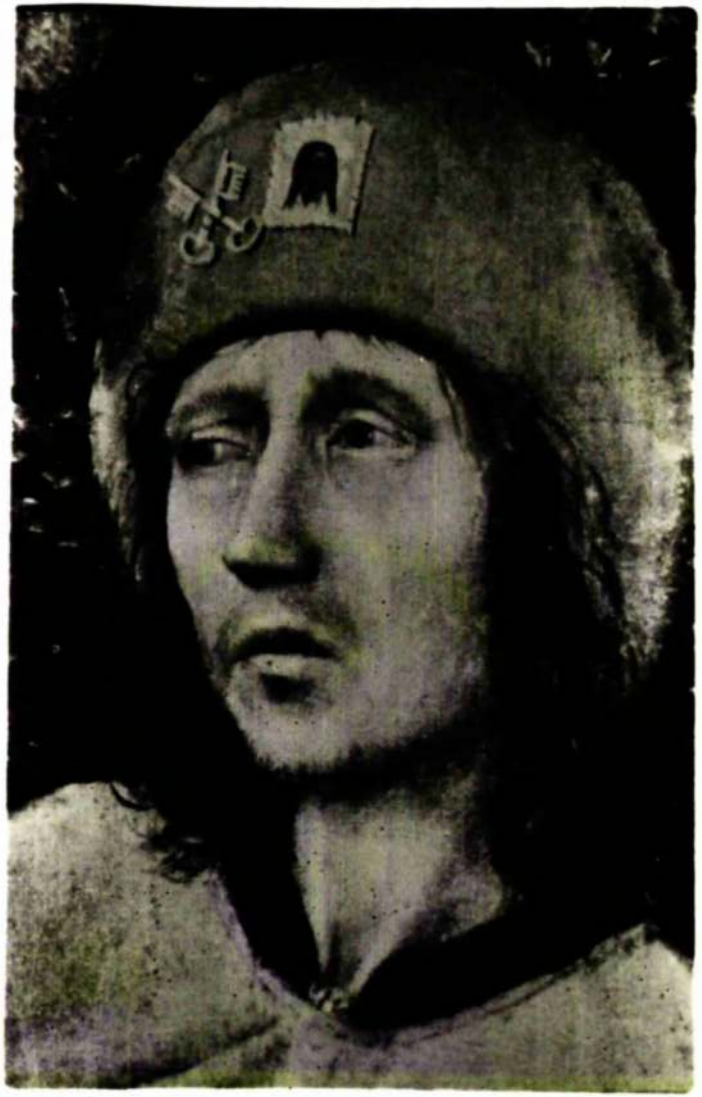


(Fig. 82) St. Alexius and St. Agnes, Master of the St. Bartholomew Altarpiece, Oil painting on panel, Cologne, ca. 1500, 1070:340 mm.

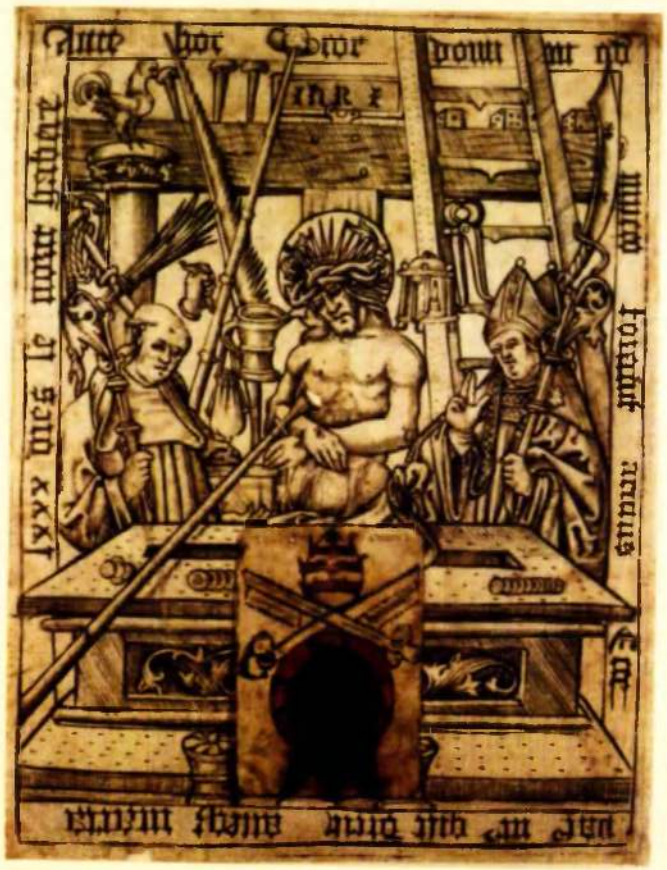


(Fig. 83) St. Lawrence Shows the Treasures of the Church, Master of the St. Ursula Legend, Oil on canvas, ca. 1510, 1302:927 mm.

(Fig. 84) Detail from Figure 83, showing pilgrim standing to the right.



(Fig. 85) Detail from a painting by Quenten Massys, dated 1519.

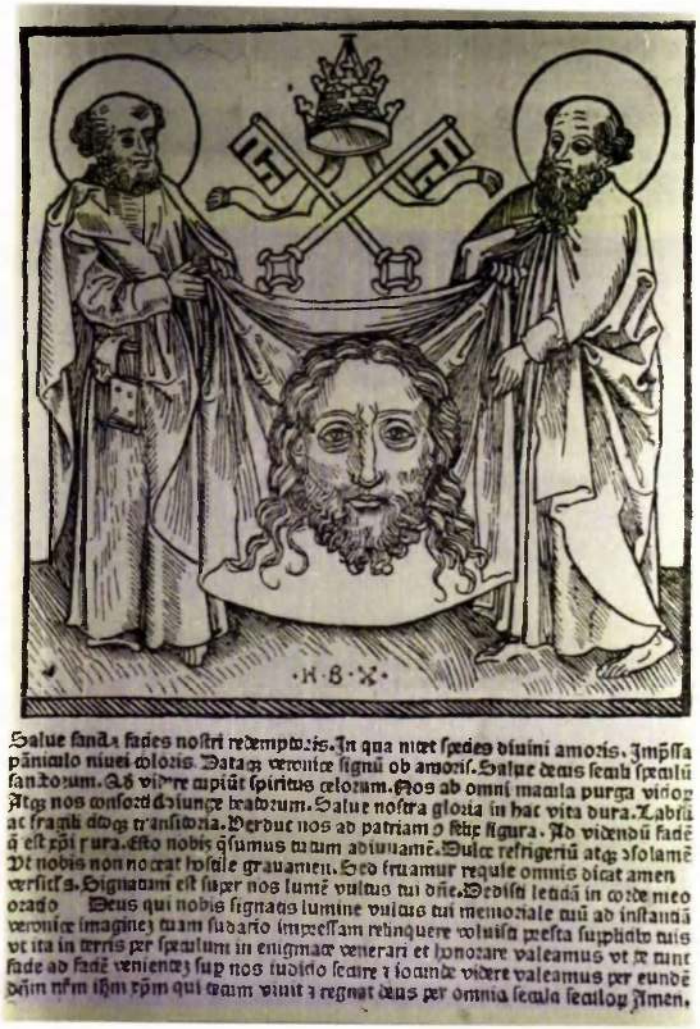


(Fig. 86) Holy Face with the Crossed-Keys and Papal Tiara, Drawing on parchment attached to an indulgence image, 35:25 mm, (See: Figure 53).

(Fig. 87) Holy Face, German, Metalcut print on parchment, ca. 1470-80, S.2444, 50:42 mm.

(Fig. 88) St. Peter and St. Paul with the Sudarium, Master E.S., Engraving, ca. 1466, 150:108 mm.

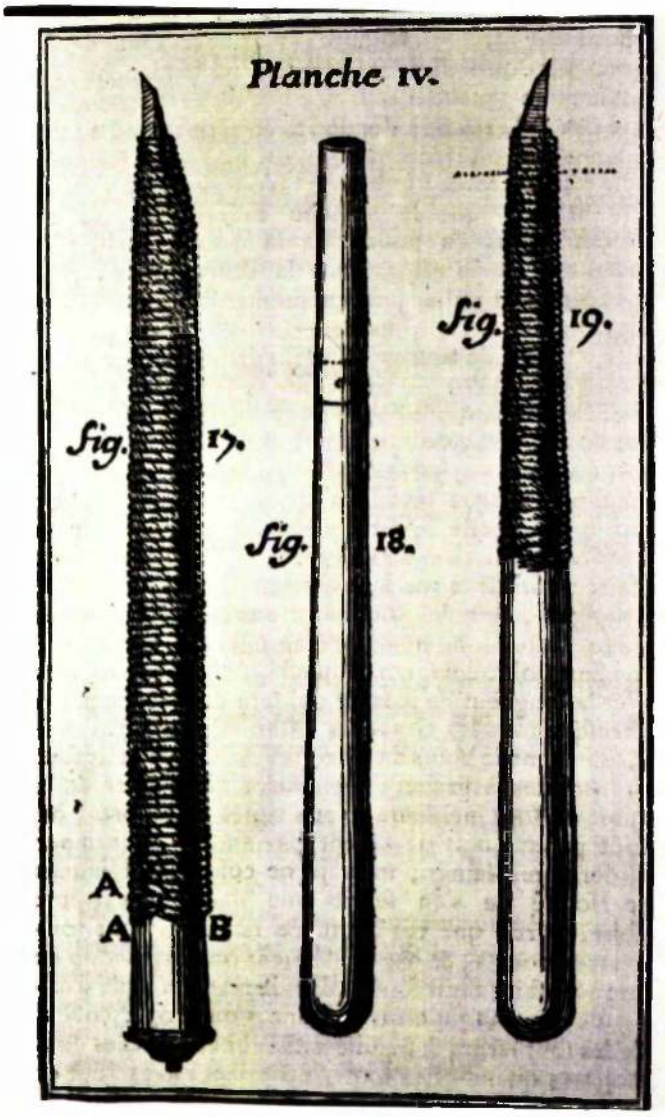
(Fig. 89) St. Peter and St. Paul with the Sudarium, Upper Rhine or Swabian, Coloured woodcut print, after 1475, S.1662, 136:104 mm.



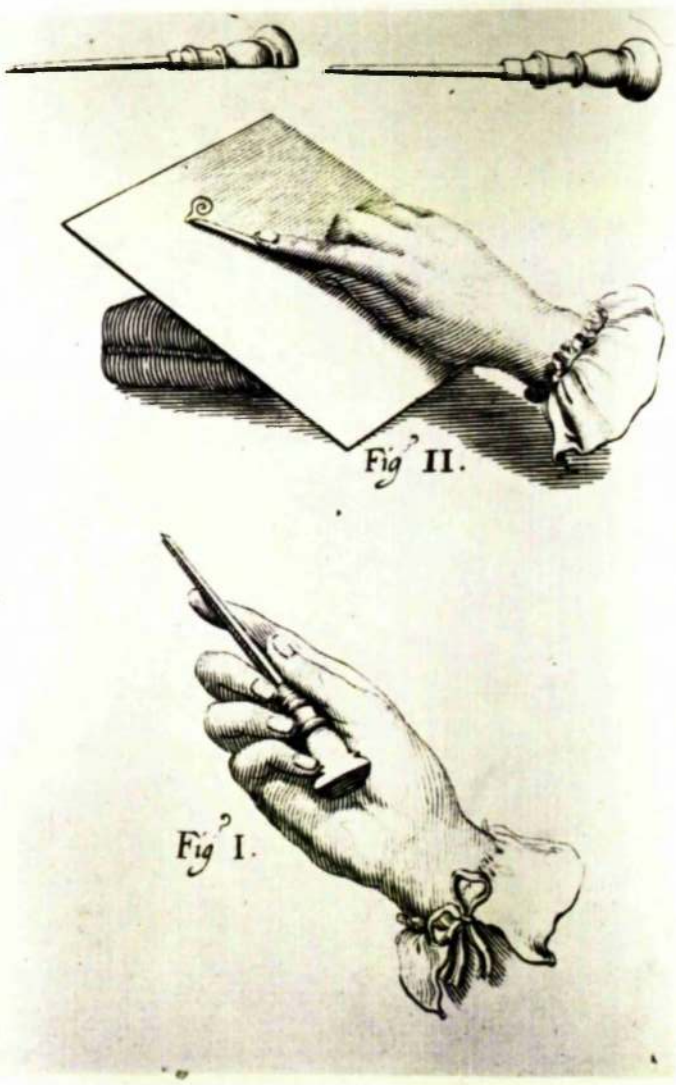
(Fig. 90) St. Peter and St. Paul with the Sudarium, German, Woodcut print, ca. 1475-85, S.1659a, 165:161 mm.

(Fig. 91) St. Peter and St. Paul with the Sudarium, German, Coloured woodcut print, Last quarter 15th c., S.1662m, 50:36 mm.

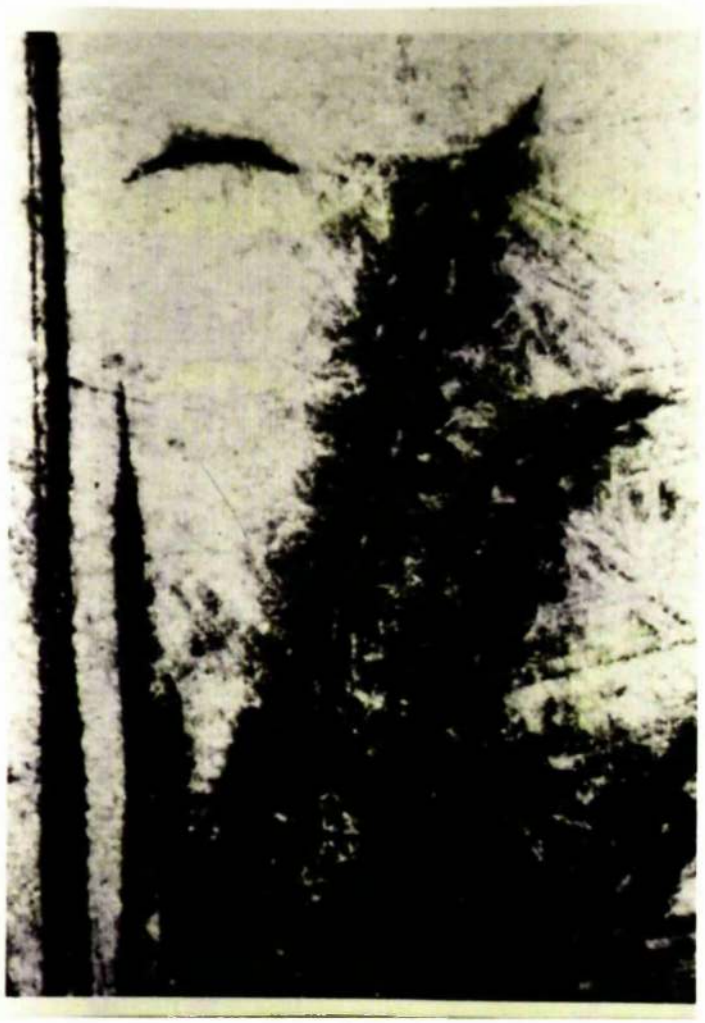
(Fig. 92) St. Roch, German, Woodcut print, Late 15th c., S.1669, 45:45 mm.



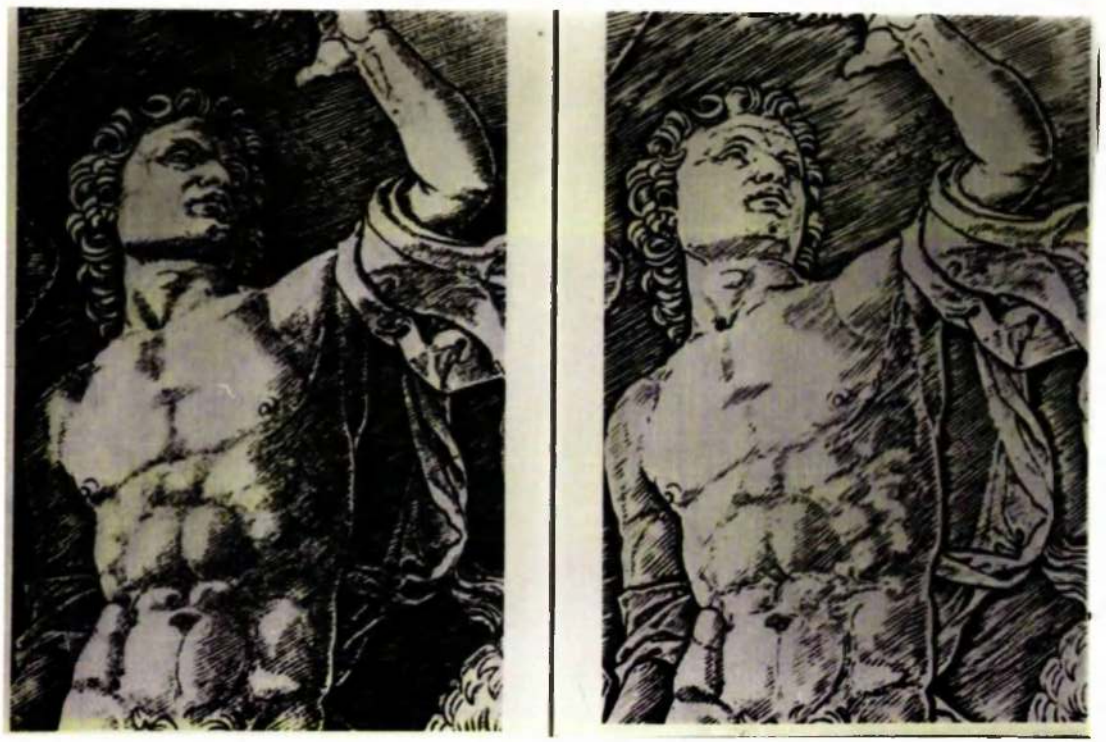
(Fig. 93) Eighteenth Century Woodcutter's Knives.



(Fig. 94) The burin, or graver; what it looks like, how it is held, and how it is used to work on a metal plate.

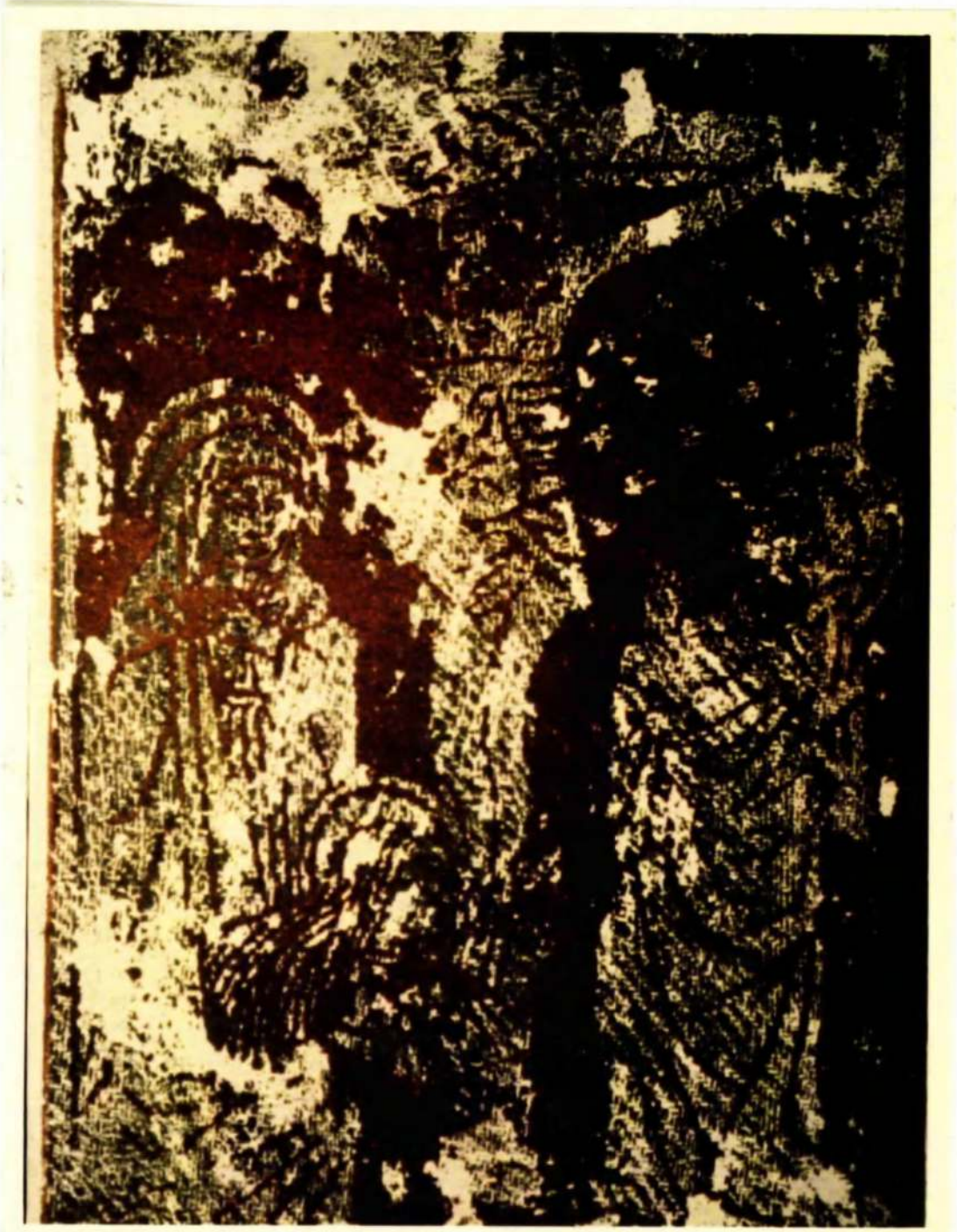


(Fig. 95) Dry-point lines shown on the right compared with engraved lines on the left.

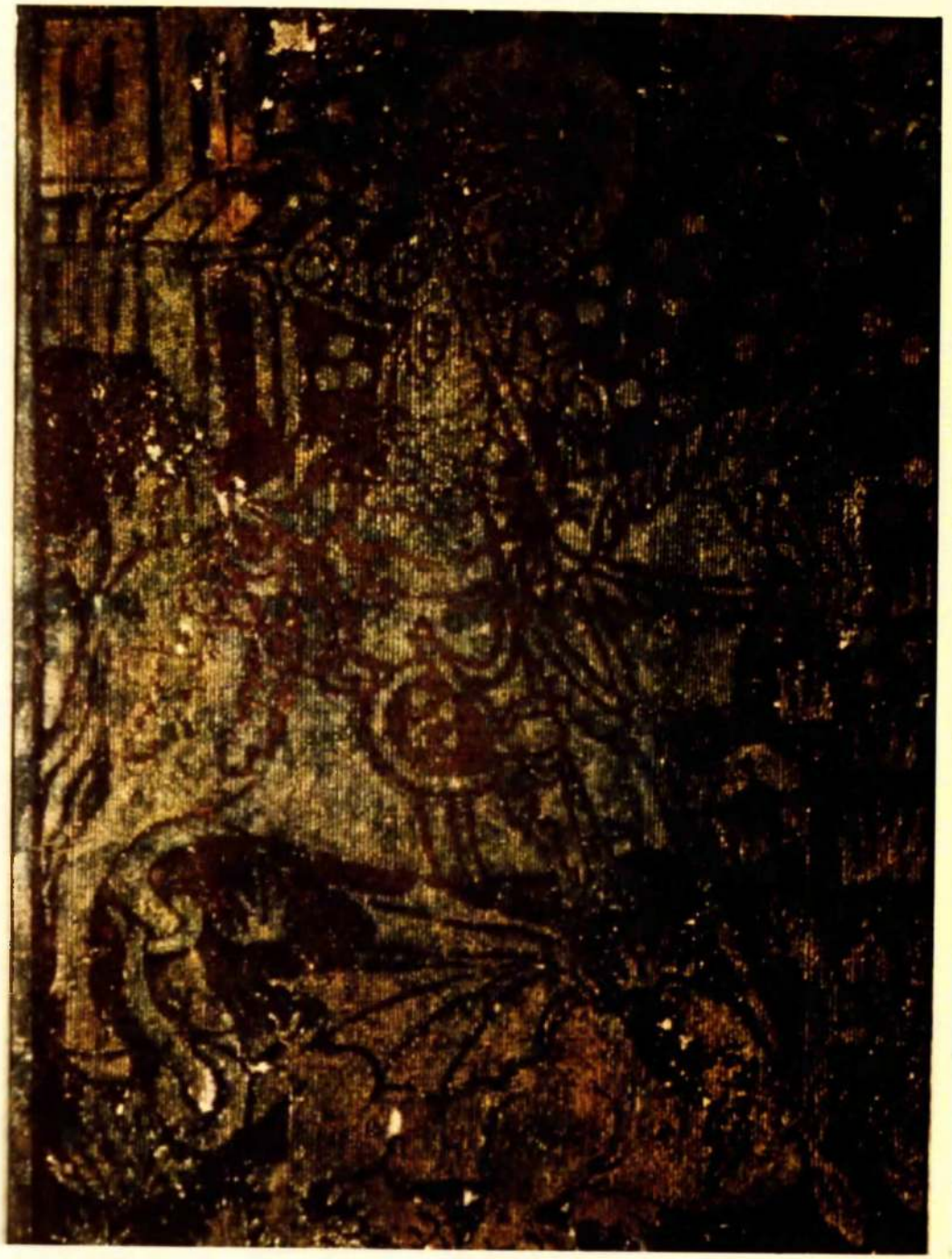


(Fig. 96) Comparison between an early impression (left) and a late impression (right) from the same plate.

(Fig. 97) A Metalcut Print, Christ Crowned with Thorns, Netherland's, 1470's.



(Fig. 98) A Flock-Print, The Crucifixion, German, ca. 1470, S.2789x, 263:185 mm.



(Fig. 99) A Flock-Print, St. George, German, ca. 1475, S.2844, 264:185 mm.

(Fig. 100) Detail from Figure 99, showing the paste and wool surface materials.

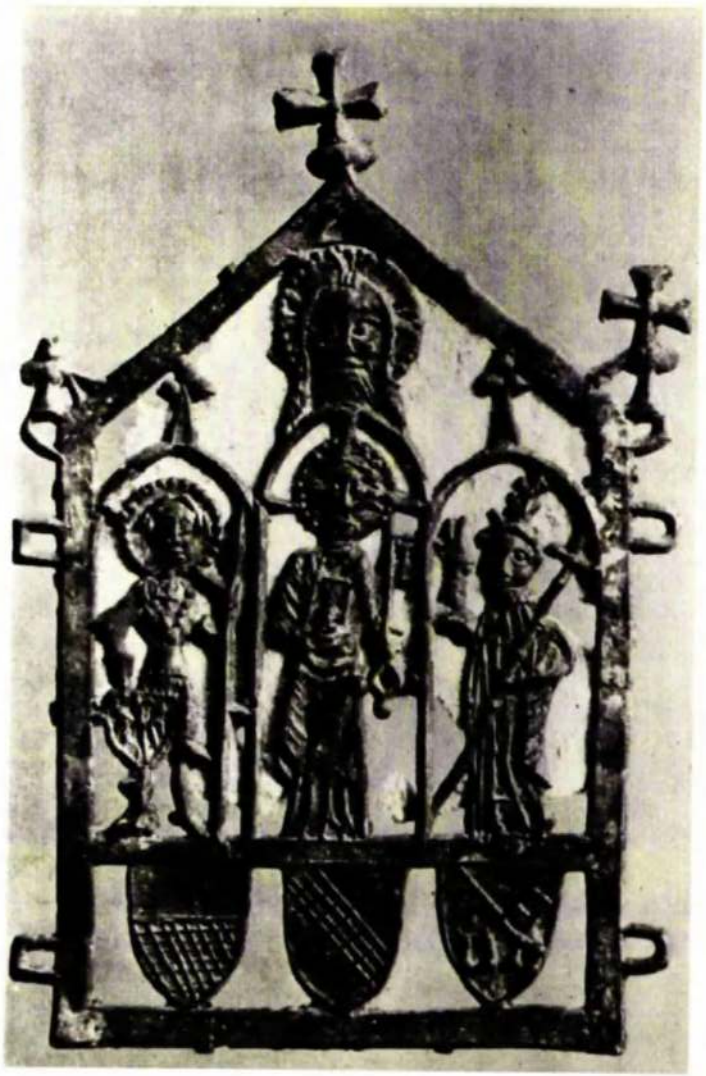
(Fig. 101) An Embroidery-Print, The Annunciation, South German, ca. 1440, S.29, 270:190 mm.

(Fig. 102) An Embroidery-Print, The Christ Child with a Cross, Swabian, ca. 1445-60, S.810, 189:134 mm.

(Fig. 103) The Patron Saints of Regensburg, Regensburg, Sealprint, ca. 1500, S.2863x, 84:73 mm (Sheet: 90:78 mm).

(Fig. 104) The Three Regensburg Saints shown in a Missale from the abbey of St. Emmeram, Regensburg, Miniature on parchment, 1406.

(Fig. 105) The Three Regensburg Saints, Master of St. Denis, Engraving, Late 15th c., 198:134 mm.



(Fig. 106) St. Mauritius, St. Peter, and Pope Boniface IX, Magdeburg, Metal pilgrim-badge, ca. 1450.

(Fig. 107) Christ as the Man of Sorrows, Wienhausen, Papier mâché plaque, Mid-15th c., 110 mm diameter.

(Fig. 108) Christ as the Man of Sorrows with Symbols of the Passion, Wienhausen, Papier mâché plaque, ca. 1500, 190 mm diameter.

(Fig. 109) The Resurrection, Lüneburg(?), Papier mâché relief, ca. 1420, 167:165 mm.

(Fig. 110) Pilgrim-badge from St. Emmeram, Regensburg, Cast lead-tin, ca. 1500.

(Fig. 111) Matrix for casting metal pilgrim-badges, from the abbey of St. Emmeram, Slate, ca. 1500.

(Fig. 112) Matrix for Springerle, Christ on the Mount of Olives, Lichtenthal, Yellow clay, 15th c., 110:80 mm, 6 mm thick.

(Fig. 113) Springerle Cake, Christ on the Mount of Olives, made from the matrix in Figure 112.

(Fig. 114) St. Eustace (St. Hubert?), Cologne, Matrix in soapstone, "1451", 100 mm diameter, 25 mm thick.

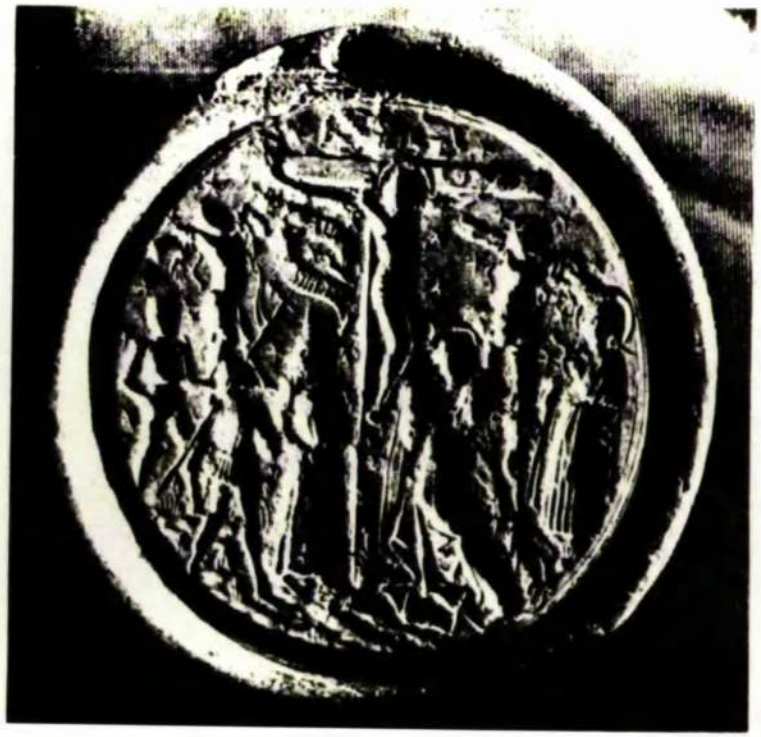
(Fig. 115) The Judgement of Paris, Upper or Middle Rhine, Matrix in clay, Late 15th c., 165 mm diameter, 144 mm diameter of decorative border.

(Fig. 116) Round box showing The Judgement of Paris scene, Nürnberg(?), Wooden box with painted papier mâché decoration, Late 15th c., Height 88 mm; Diameter 203 mm.

(Fig. 117) Box lid from Figure 116, showing The Judgement of Paris, relief, Painted papier mâché, 138-140 mm diameter.

(Fig. 118) The Judgement of Paris, Master of the Banderoles, Engraving, 15th c., 147:203 mm.

(Fig. 119) Pilgrim-flask, Cologne, Stoneware with a salt glaze, ca. 1450-1500, Height 200 mm.



(Fig. 120) The Crucifixion, German, Clay matrix, 15th c., 93 mm diameter.

(Fig. 121) The Crucifixion, Siegburg, Clay relief decoration on a jug, ca. 1650-1700.

(Fig. 122) St. George Killing the Dragon, Master E.S., Engraving, ca. 1450-68, 115: 149 mm.

(Fig. 123) St. Mark, Master E.S., Engraving, ca. 1460-65, 145:98 mm.

(Fig. 124) The Madonna and Child Enthroned, After an engraving by Master E.S., Mother-of-pearl carving, South German, ca. 1470-80, 45 mm diameter.

(Fig. 125) Madonna of Einsiedeln, Master E.S., Engraving, 1466, 210:123 mm.

(Fig. 126) The Baptism, After an engraving by Master E.S., Stained glass roundel, 15th c..

(Fig. 127) The Baptism, Master E.S., Engraving, 1450-60, 188:130 mm.

(Fig. 128) "The Markle Plaque", Middle Rhine, Clay matrix, ca. 1460-1500, 154 mm diameter, central composition 137 mm diameter, 15 mm thick.

(Fig. 129) Relief cast made from the "Markle Plaque", Resin.

(Fig. 130) The Madonna with the Playing Christ Child Seated in a Garden, Master E.S., Engraving, ca. 1450-60, 107:71 mm.

(Fig. 131) The Holy Face in Profile, Lüneburg, Painted, low-relief papier mâché plaque, ca. 1500, 98 mm diameter.

(Fig. 132) The Assumption of St. Mary Magdalene, Master E.S., Engraving, ca. 1450, 165: 127 mm.

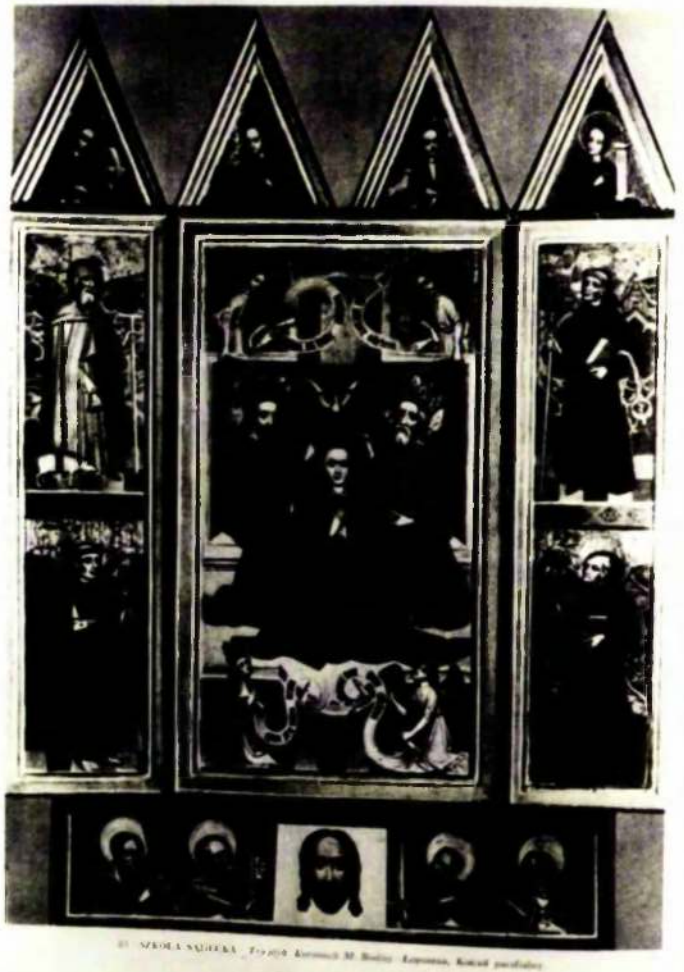
(Fig. 133) St. Mary Magdalene with six Angels, Tilman Riemenschneider, Limewood sculpture, 1490-92, Height 1870 mm and (Angels) 620-840 mm.

(Fig. 134) The Assumption of St. Mary Magdalene, After an engraving by Master E.S., Middle Rhenish, Clay matrix (fragment), Late 15th c., 140:85 mm; central composition about 120 mm; 11 mm thick.

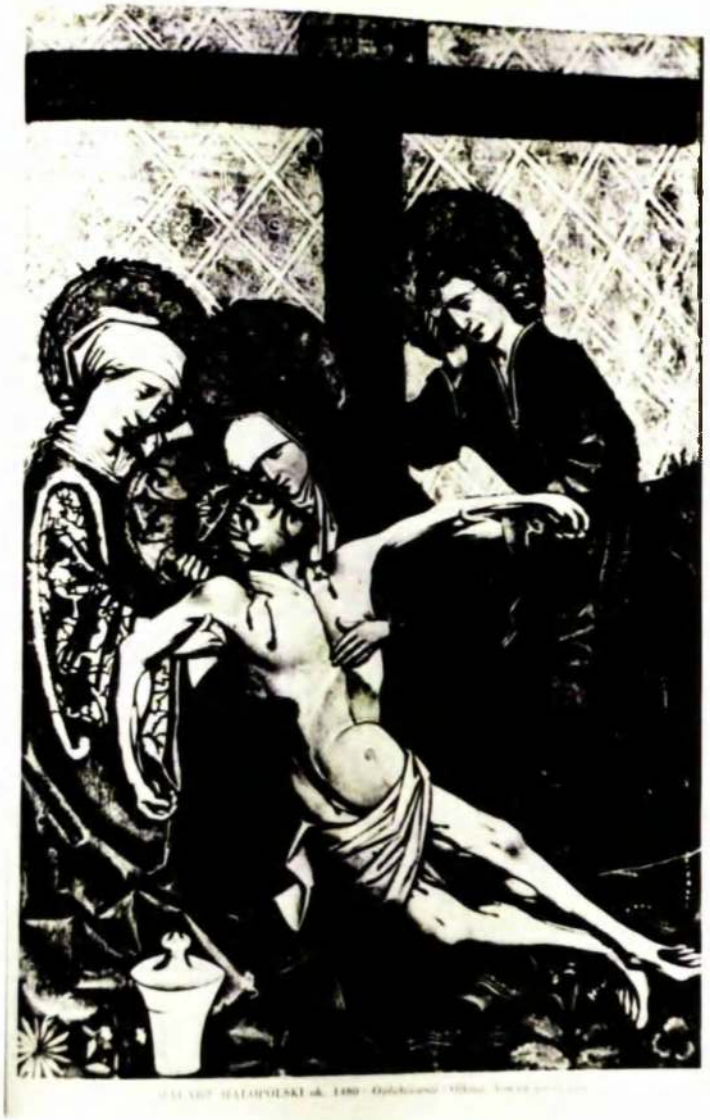
(Fig. 135) The Virgin Crowned by the Trinity, Bohemia(?), Sealprint, Late 15th c., S.2864m, 147:123 mm.

(Fig. 136) Coronation of the Virgin, Poland, Oil painting on panel, ca. 1460.

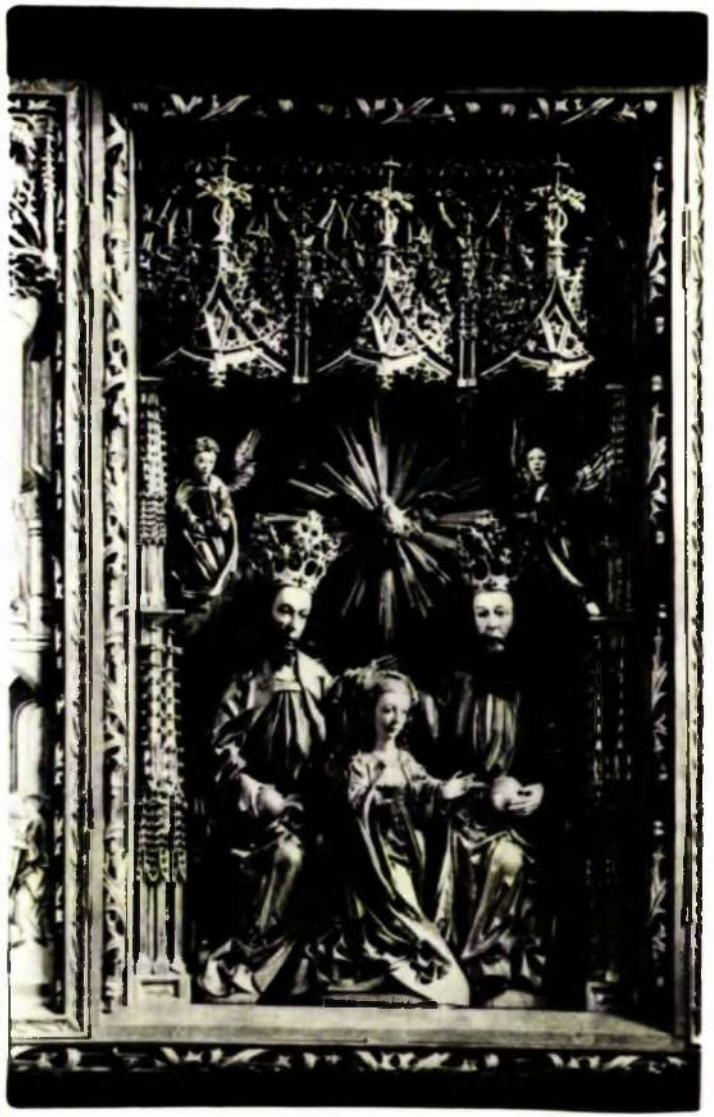
(Fig. 137) Coronation of the Virgin, Poland, Oil painting on panel, ca. 1450-1500.



(Fig. 138) Coronation of the Virgin, Poland, Triptych oil painting, 15th c..



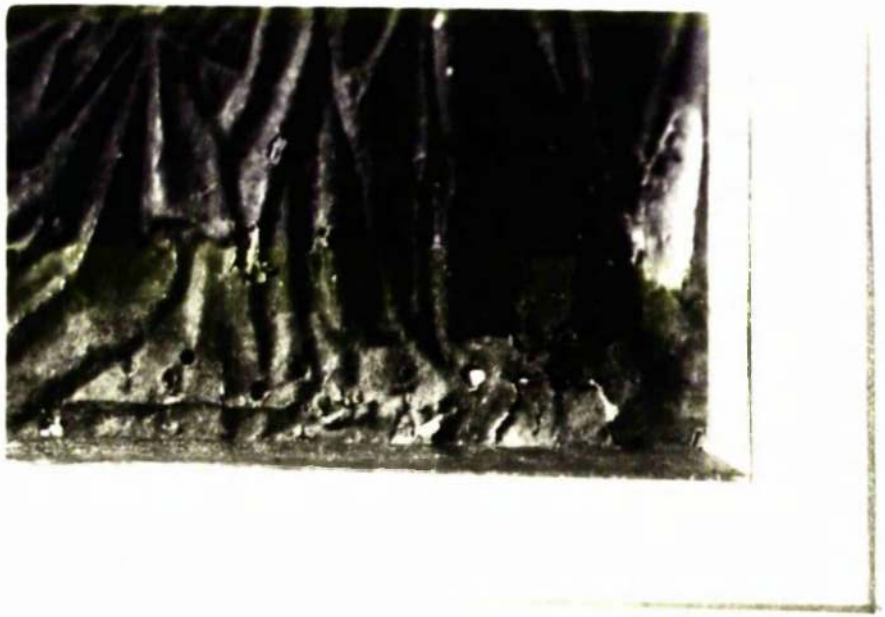
(Fig. 139) The Lamentation, Poland, Oil panel painting, ca. 1480.



(Fig. 140) Coronation of the Virgin, Bohemia, Carved altarpiece, ca. 1495.

(Fig. 141) Detail of Figure 135.

(Fig. 142) Detail of Figure 135.



(Fig. 143) Detail of Figure 135.

(Fig. 144) Detail of Figure 135.

(Fig. 145) Detail of Figure 135.

(Fig. 146) The Annunciation, Aachen, Matrix in graphite, End of 15th c., 170:125 mm.

(Fig. 147) Madonna Lactanse, Aachen, Matrix in graphite, End of 15th c., 170:125 mm.

(Fig. 148) The Virgin Crowned by the Trinity, Wienhausen, Coloured papier mâché relief, ca. 1450-1500, 205:155 mm.

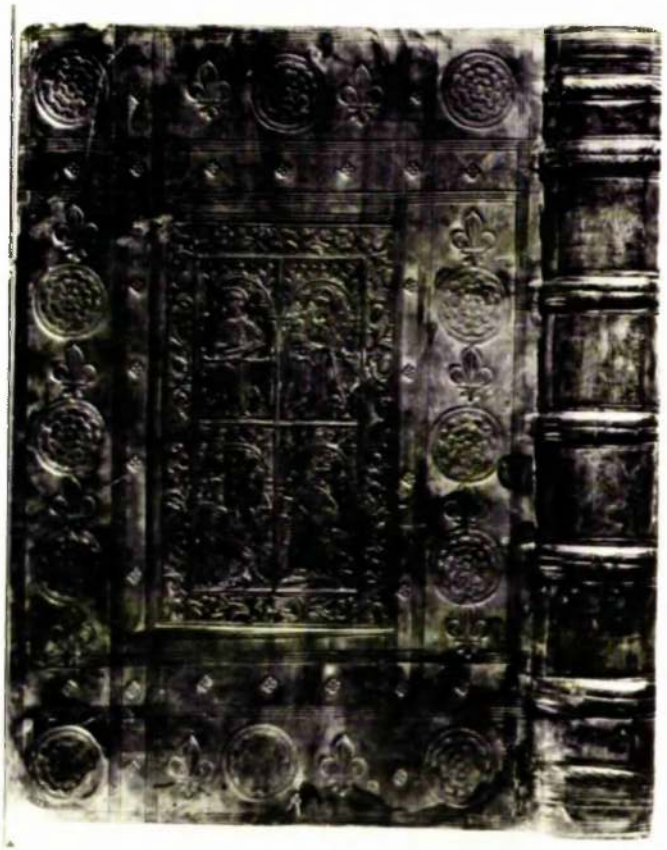
(Fig. 149) Female Saint (St. Barbara?), French, Sealprint, ca. 1500(?), S.*2863q, 78:42 mm.

(Fig. 150) St. Barbara, Martin Schongauer, Engraving, ca. 1480-90, 100:61 mm.

(Fig. 151) St. Barbara, French, Three panel-stamped designs in leather (shown here as rubbings), Late 15th - early 16th c.

(Fig. 152) The Annunciation, Paris, Panel-stamped design in four "compartments" on light brown calf, Late 15th c..

(Fig. 153) Sts. John the Evangelist, Barbara, Catherine, and Nicolas, Paris, Four panel-stamped "compartments" in brown calf, 1512, 167:104 mm (panel), 83:52 mm (individual "compartments").

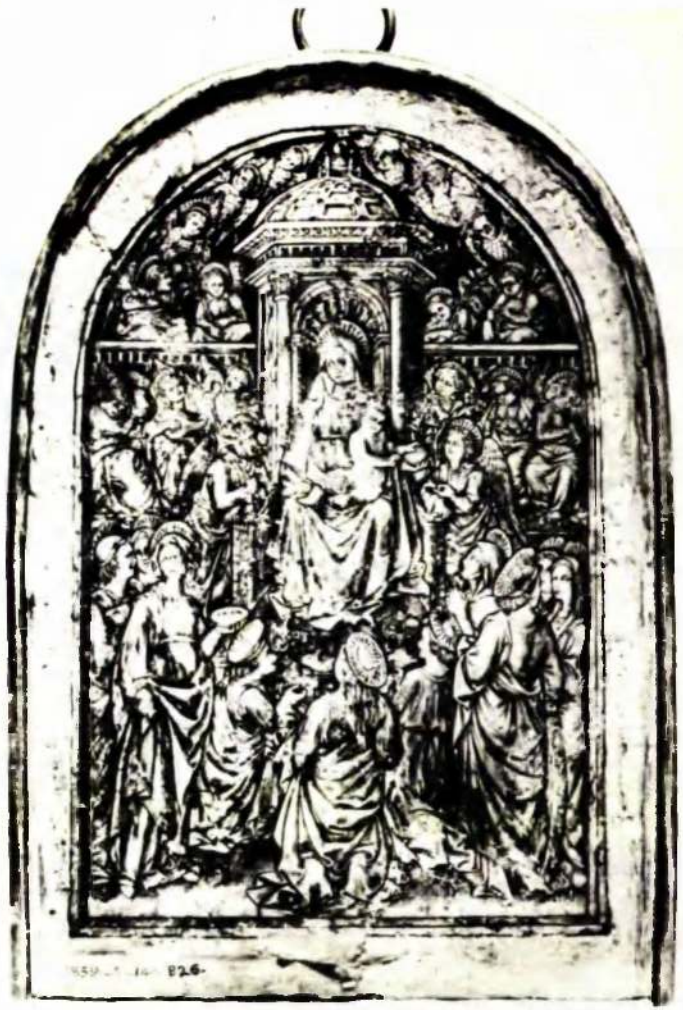


(Fig. 154) St. John the Baptist, the Virgin and Child, "Three Listeners", and King David, Paris, One large panel-stamped design in leather, 1520, 158:98 mm.

(Fig. 155) St. John the Evangelist and the Virgin and Child with St. Anne, German, Wooden panel-stamped design in dark brown calf divided into two "compartments", 1534, 94:50 mm.

(Fig. 156) The Madonna and Child in a Gothic Interior, German, Pasteprint, 15th c., S.2825, 74:45 mm.

(Fig. 157) The Madonna and Child in a Gothic Interior, German, Metalcut print, 15th c., S.2492x, 74:54 mm.



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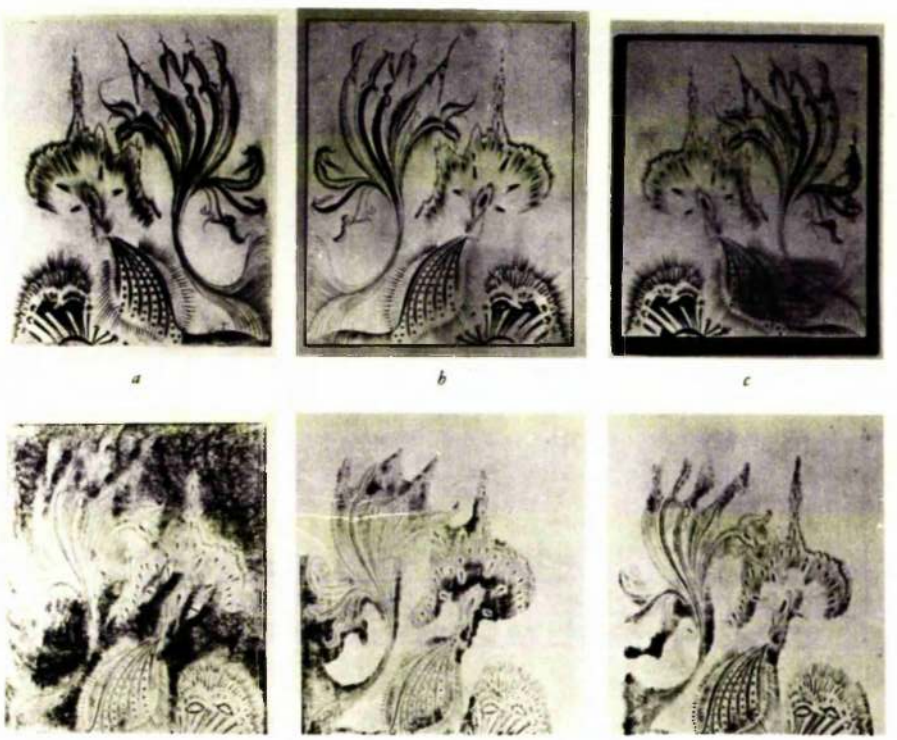
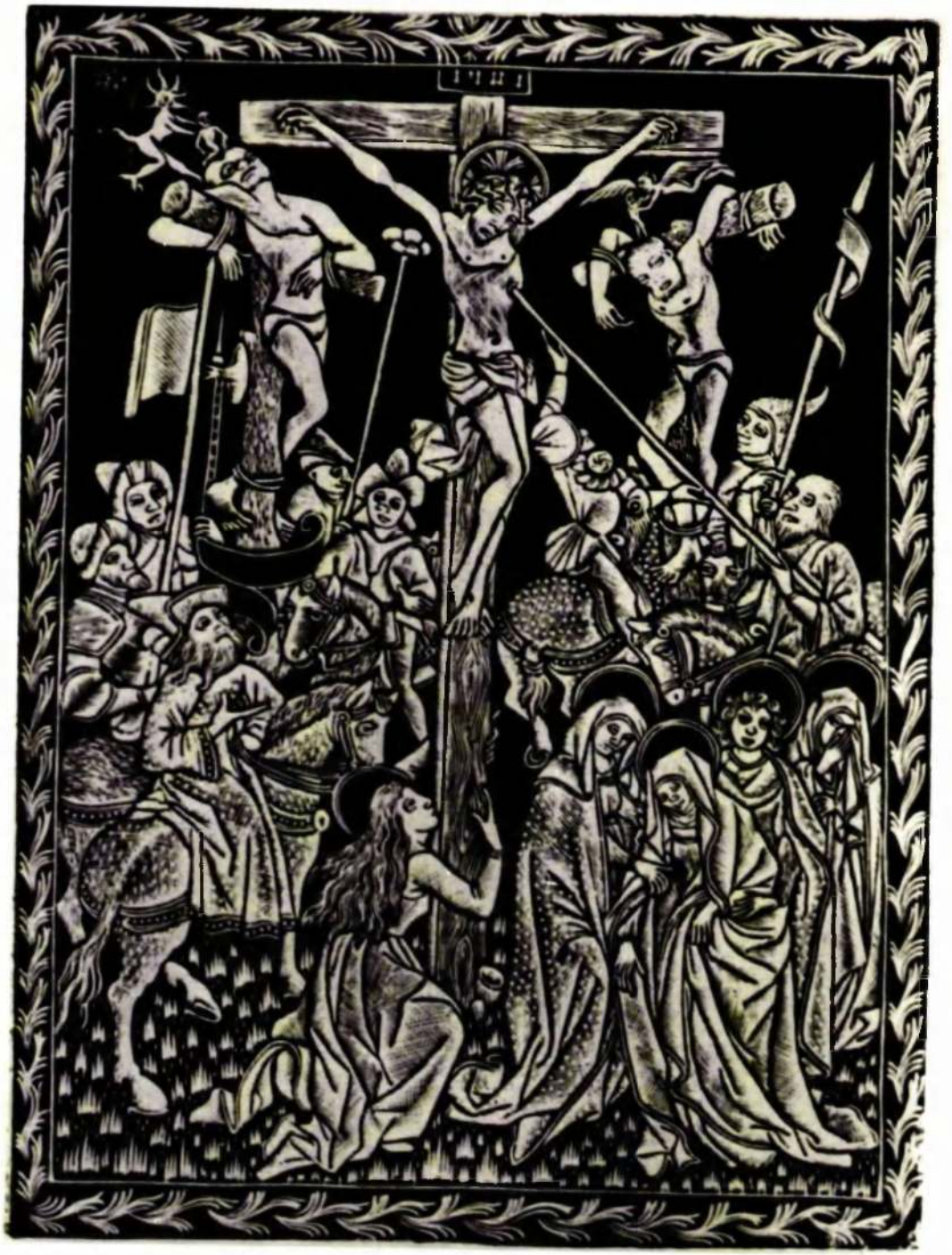
(Fig. 158) The Virgin and Child Enthroned with Angels and Saints, Florentine, Sulfur cast, ca. 1450-75, 108:71 mm (with borders).

(Fig. 159) The Virgin and Child Enthroned with Angels and Saints, Florentine, Printed from a sulfur cast, ca. 1450-1500, 107:70 mm (with borders).



(Fig. 160) Print made from copper plate (a), Copper plate (b), Fiberglass cast made from copper plate (c), Three impressions pulled from the cast in Figure (c).

(Fig. 161) The Crucifixion, German, Pasteprint, 15th c., S.2791, 175:122 mm.

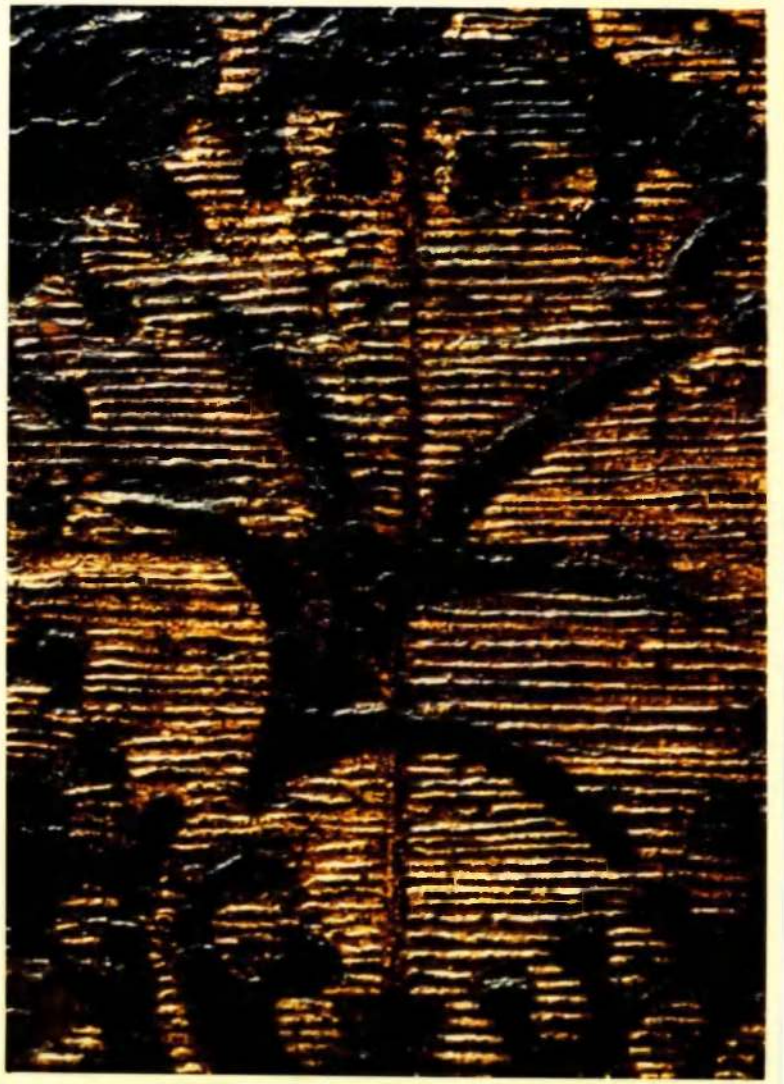


(Fig. 162) The Crucifixion, German, Metalcut print, 15th c., S.2344, 178:125 mm.

(Fig. 163) St. John the Evangelist, German, Pasteprint, 15th c., S.2850, 106:71 mm.

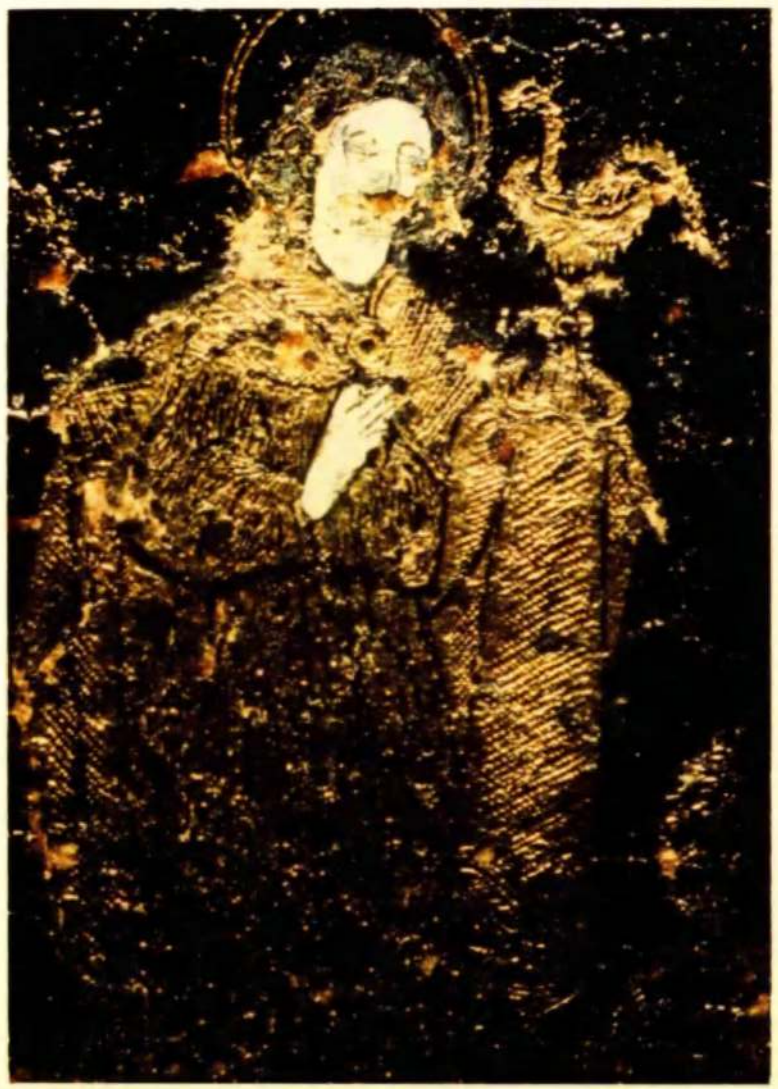
(Fig. 164) St. Eligius, Petrus Christus, Oil painting on oak, 1449, 413:58 mm.

(Fig. 165) St. Lawrence, Arguís Master, Oil on wood panel with imitation brocade appliqués in wax-resin, 1465.



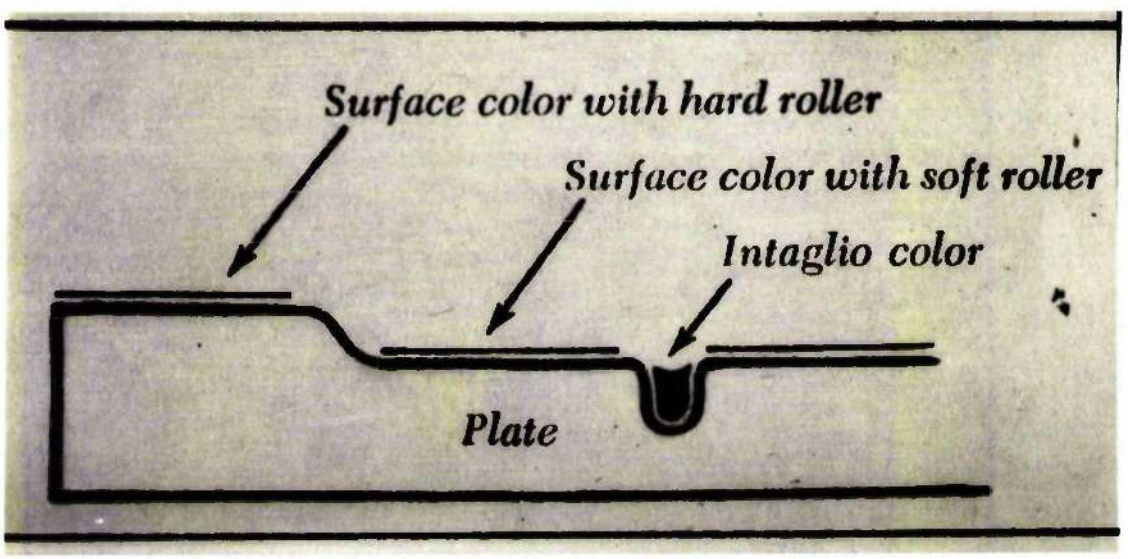
(Fig. 166) Detail from Figure 165, showing imitation brocade appliqué pattern.

(Fig. 167) Detail from Figure 165, showing imitation brocade appliqué pattern.



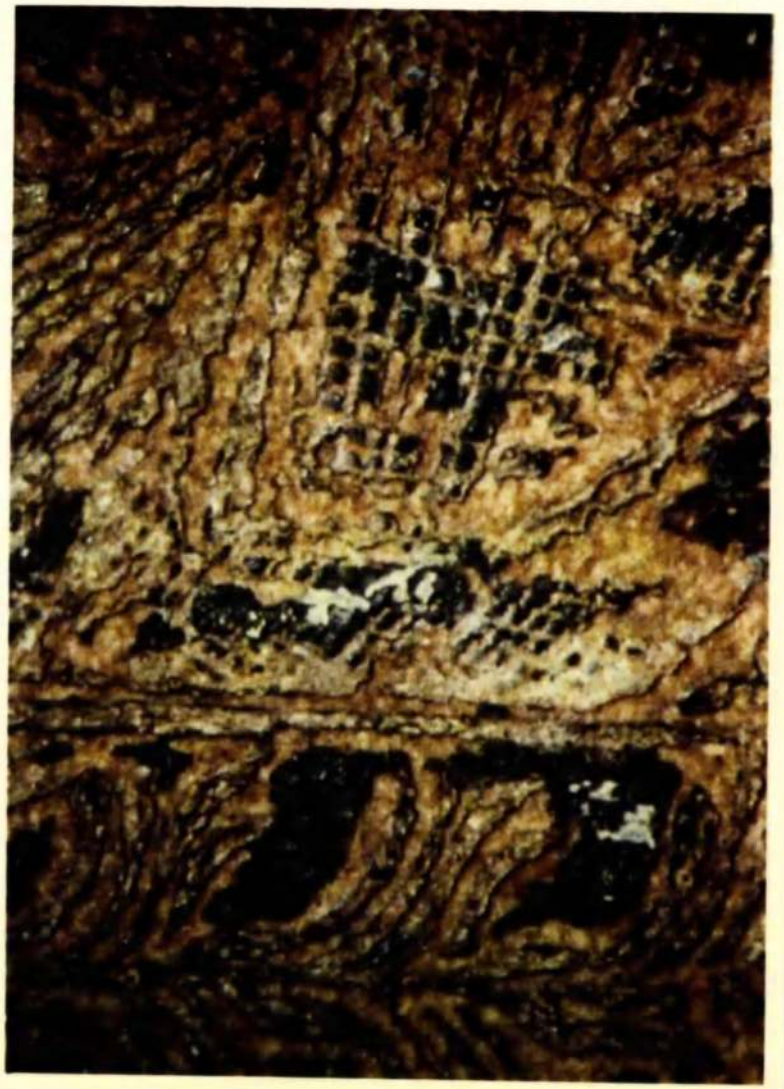
(Fig. 168) Detail from Figure 163, showing gold ridges and black coloured areas of the design.

(Fig. 169) Detail from Figure 156, showing the white colouring on the pasteprint surface.



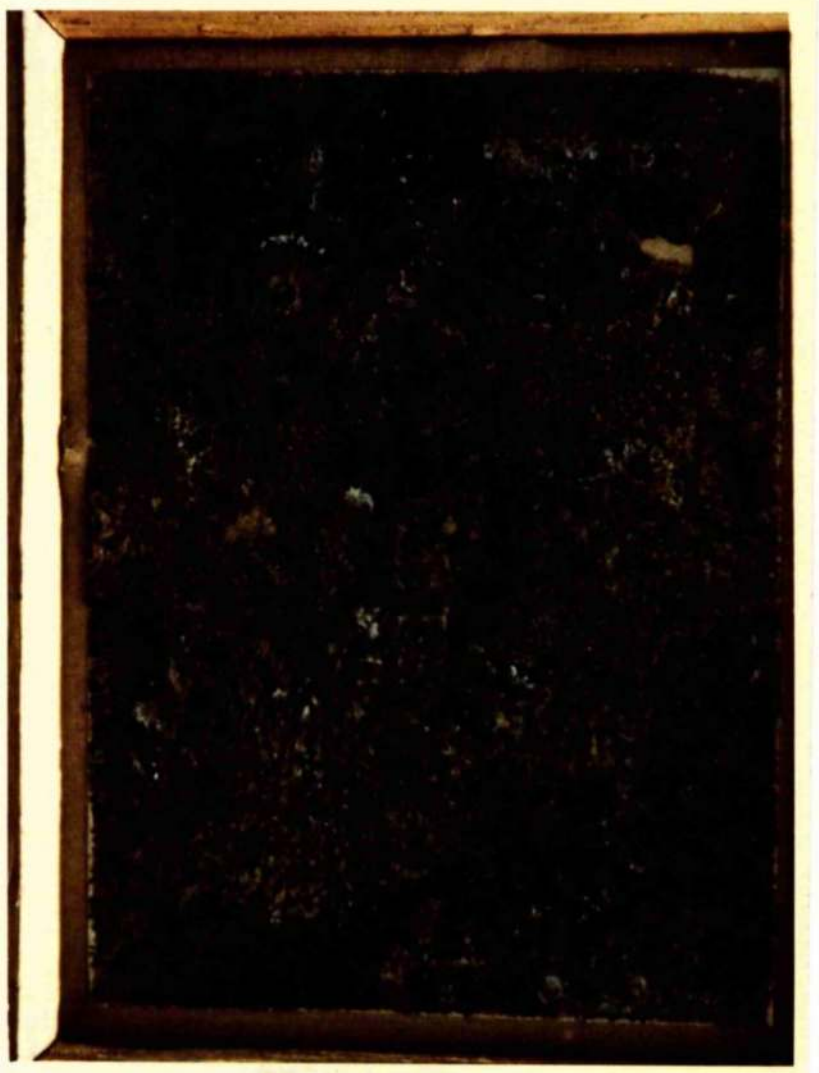
(Fig. 170) Technique for inking an intaglio plate in more than one colour.

(Fig. 171) Christ Washing the Disciples' Feet, German, Pasteprint, 15th c., S.2776, 103:74 mm.



(Fig. 172) Detail from Figure 171, taken from area along lower left edge.

(Fig. 173) Detail from Figure 171, taken from area showing figure at the top left.



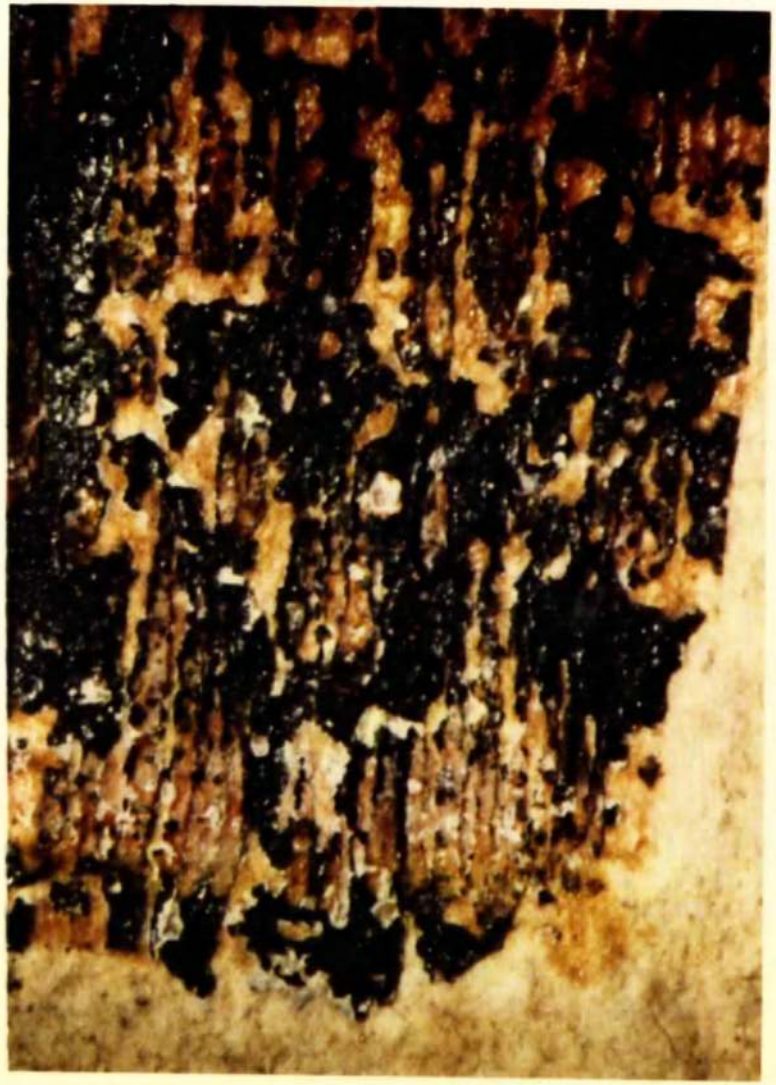
(Fig. 171) Christ Washing the Disciples' Feet, German, Pasteprint, 15th c., S.2776, 103:74 mm.

(Fig. 174) The Disrobing of Christ, German, Paste-print, 15th c., S.2789m (=2804), Paper, 146:103 mm; Paste, 104:72 mm.

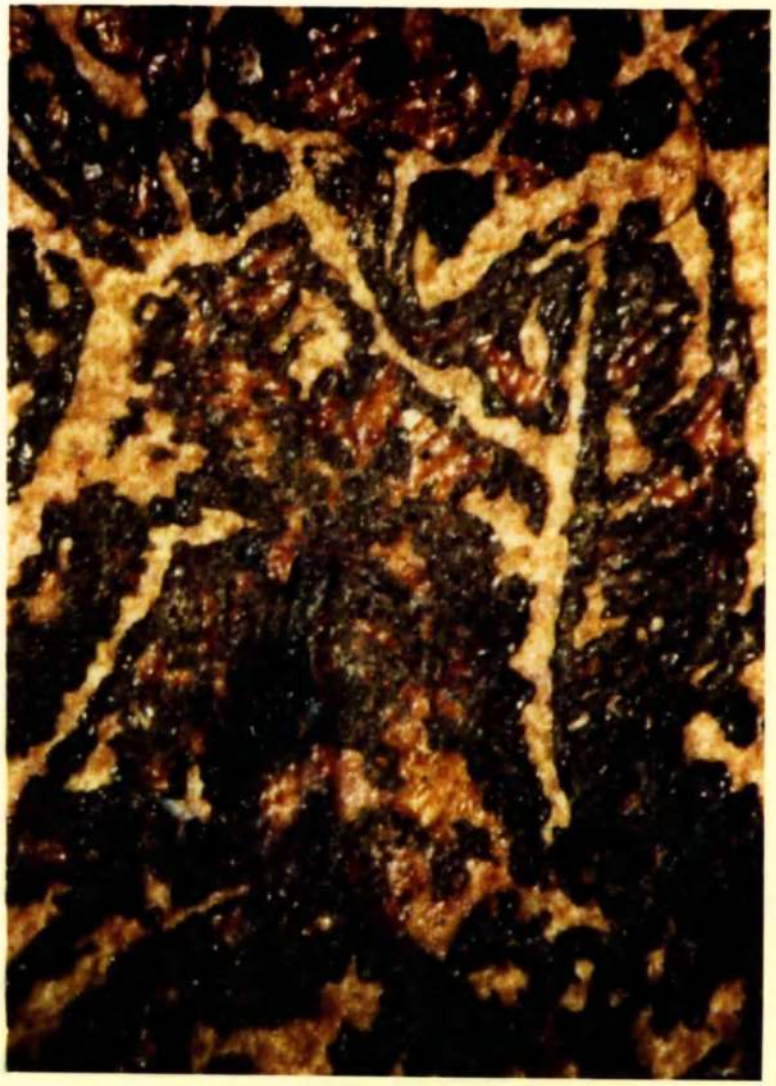
(Fig. 175) The Disrobing of Christ, Master E.S., Engraving, ca. 1450-68, 104:72 mm.

(Fig. 176) The support for the pasteprint shown Figure 174, a wooden cover from a book bound in red moroccan leather.

(Fig. 177) The pasteprint shown in Figure 174 on its support.

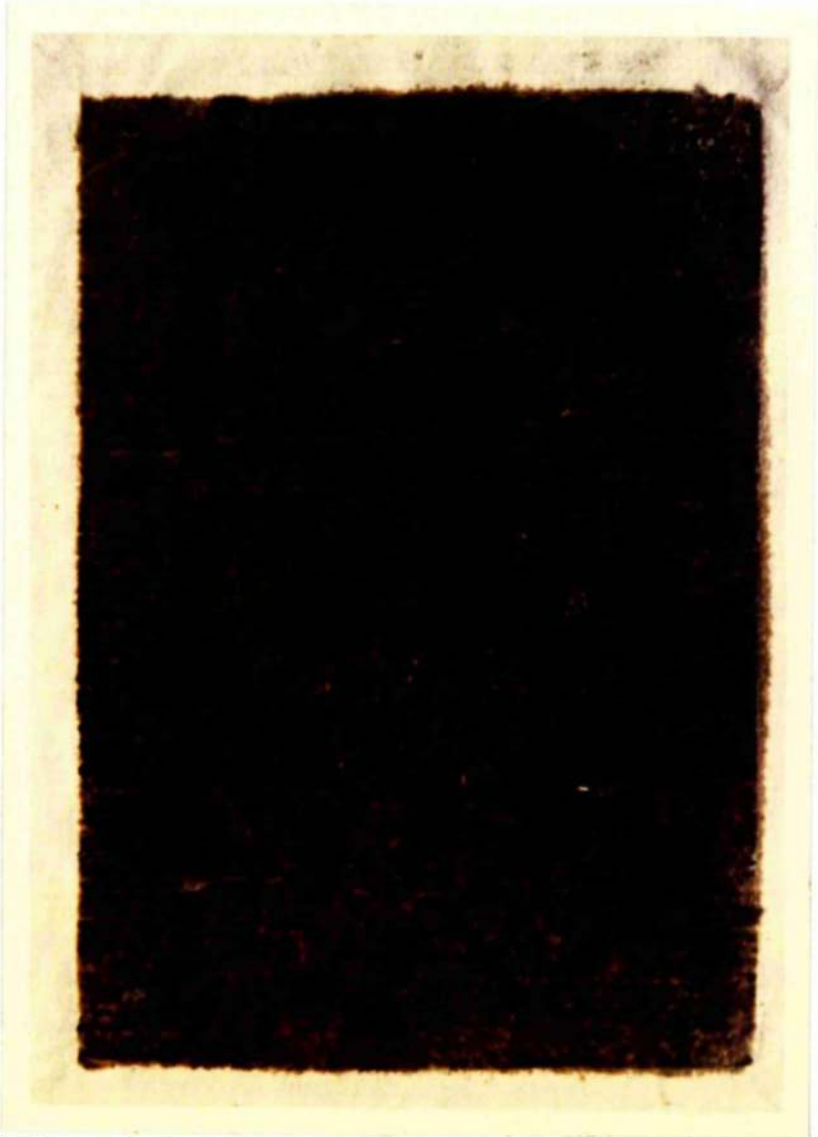


(Fig. 178) Detail from Figure 174, taken from lower right edge.

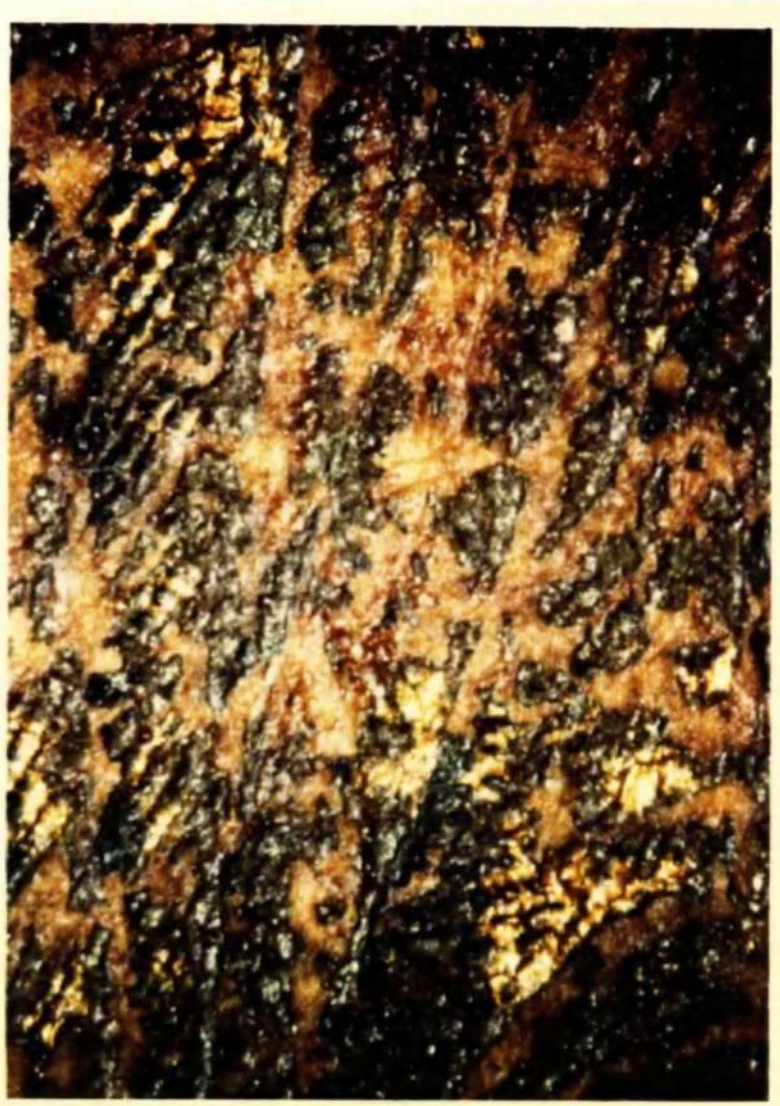


(Fig. 179) Detail from Figure 174, taken from central area.

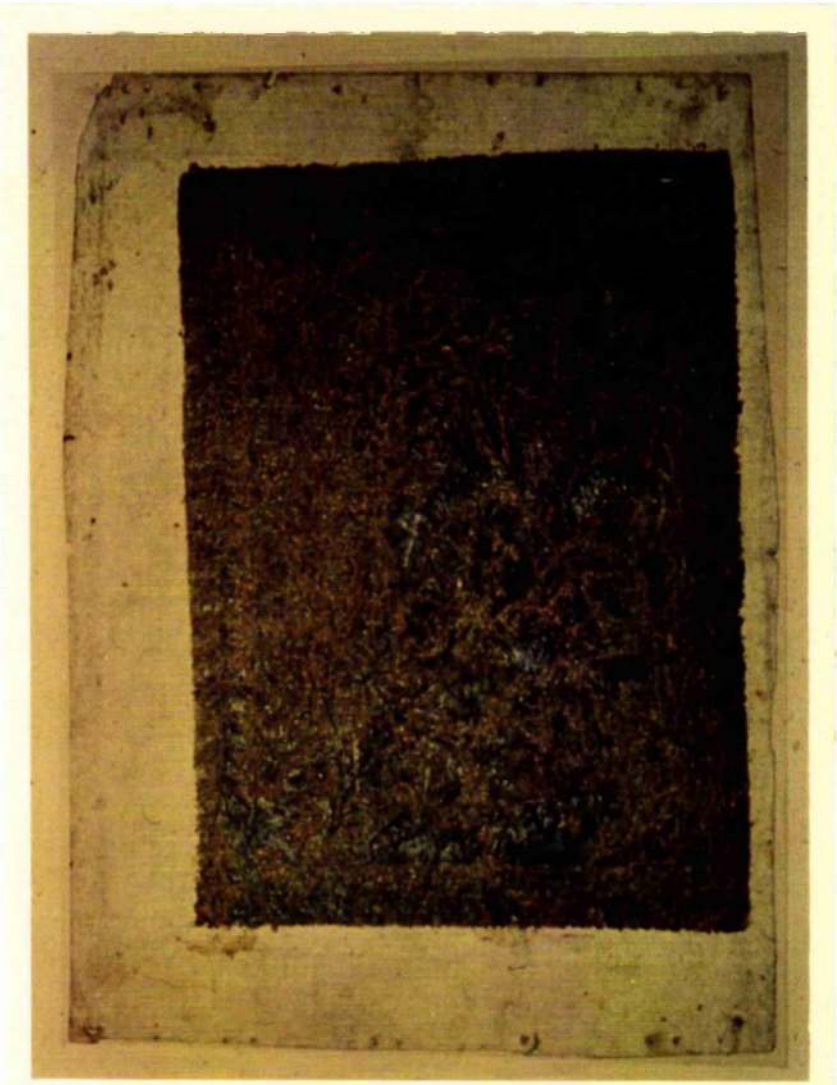
(Fig. 180) Detail from Figure 174, showing figure of Christ in centre of composition.



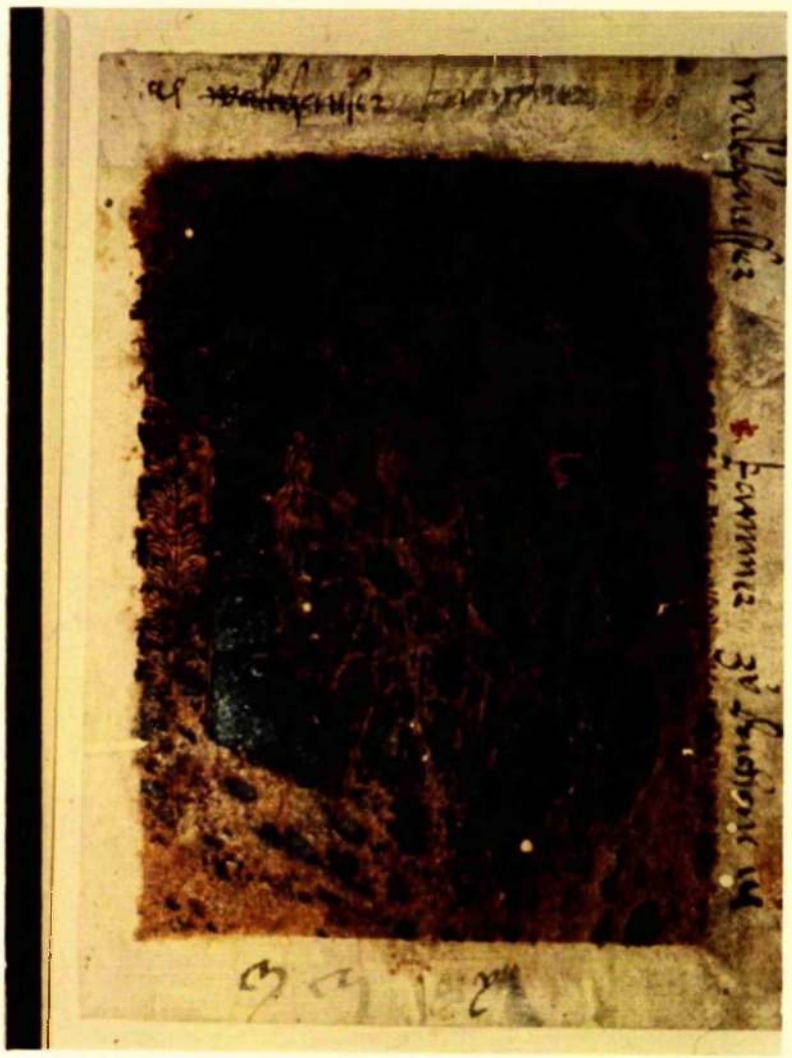
(Fig. 181) St. Jerome, German, Pasteprint, 15th c., S.2851b, Paper, 149:109 mm; Paste, 103:75 mm.



(Fig. 182) Detail from Figure 181, showing use of gold on surface.



(Fig. 183) Christ Washing the Disciples' Feet, German, Pasteprint, 15th c., S.2776, 102:76 mm.



(Fig. 184) St. Dorothy, German, Pasteprint, 15th c., S.2842, 100:75 mm.

(Fig. 185) The Crucifixion, German, Pasteprint, 15th c., S.2791, 175:122 mm.

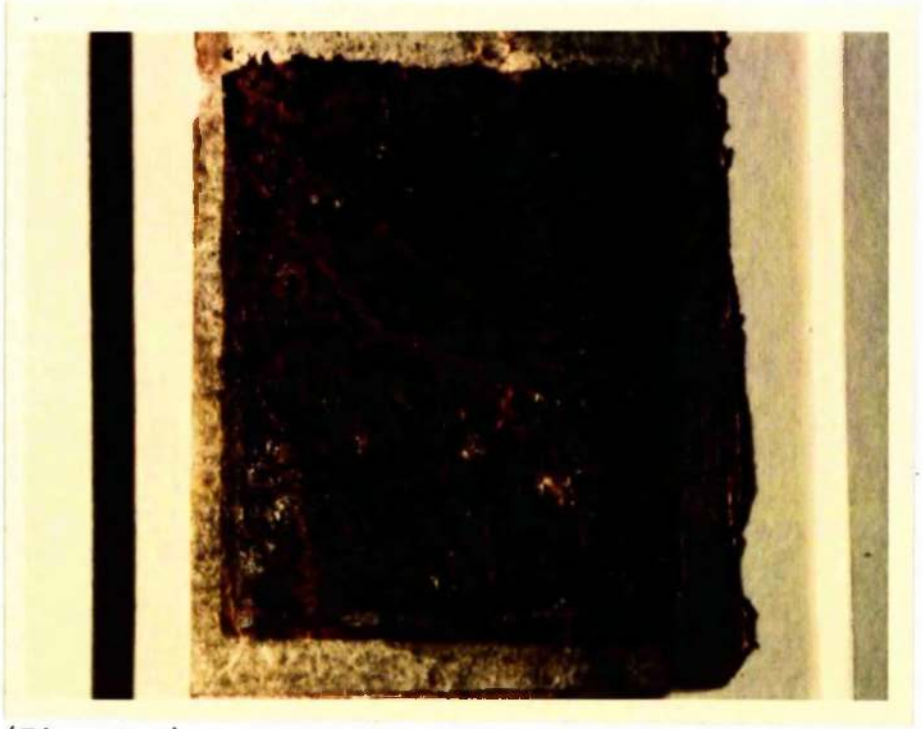
(Fig. 186) The Crucifixion, Master E.S., Engraving, ca. 1450-60, 166:115 mm.

(Fig. 187) Madonna and Child in Glory, German, Pasteprint, ca. 1480, S.2826m, 82:78 mm.

(Fig. 188) St. John the Evangelist, German, Pasteprint, 15th c., S.2850, 106:71 mm.

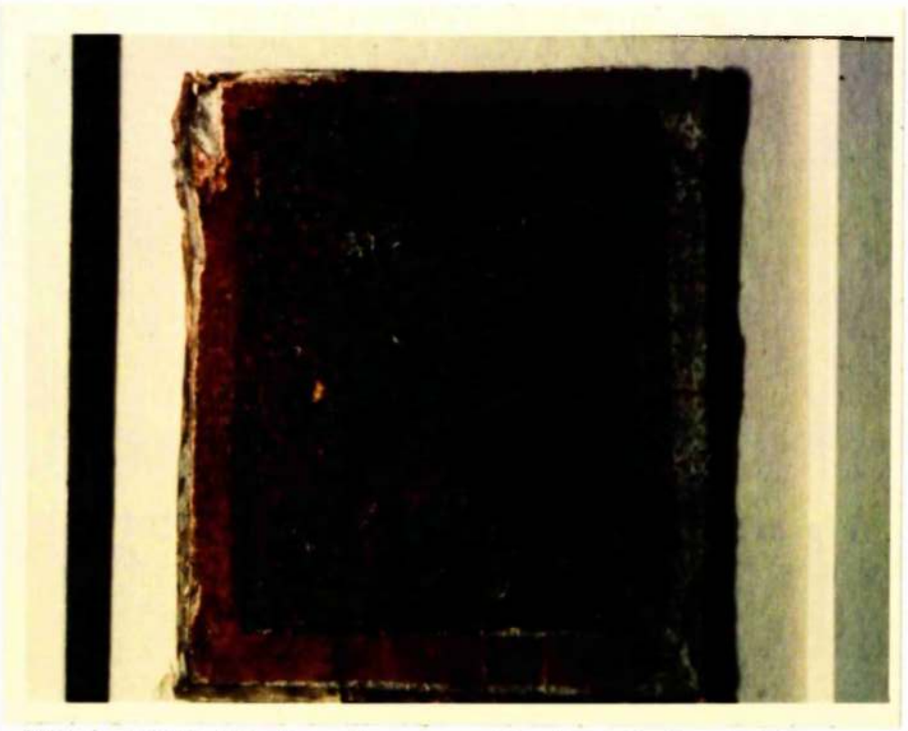
(Fig. 189) Coronation of the Virgin, German, Pasteprint, 15th c., S.2828, 105:73 mm.

(Fig. 190) Coronation of the Virgin, German, Metalcut print, 15th c., S.2437, 106:73 mm.

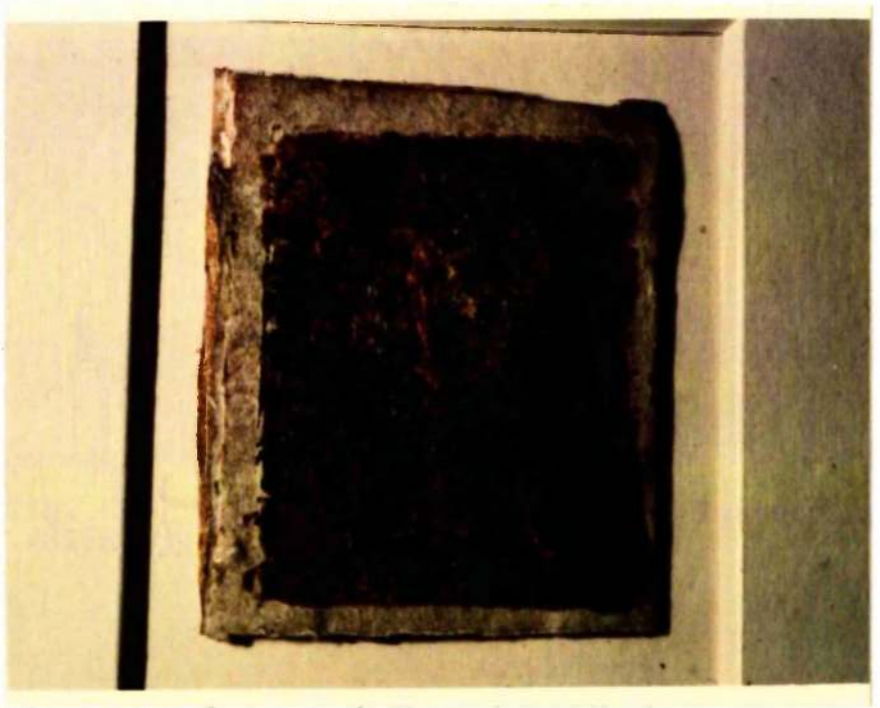


(Fig. 191) The Holy Trinity, German, Pasteprint, 15th c., S.2811m, 40:32 mm.

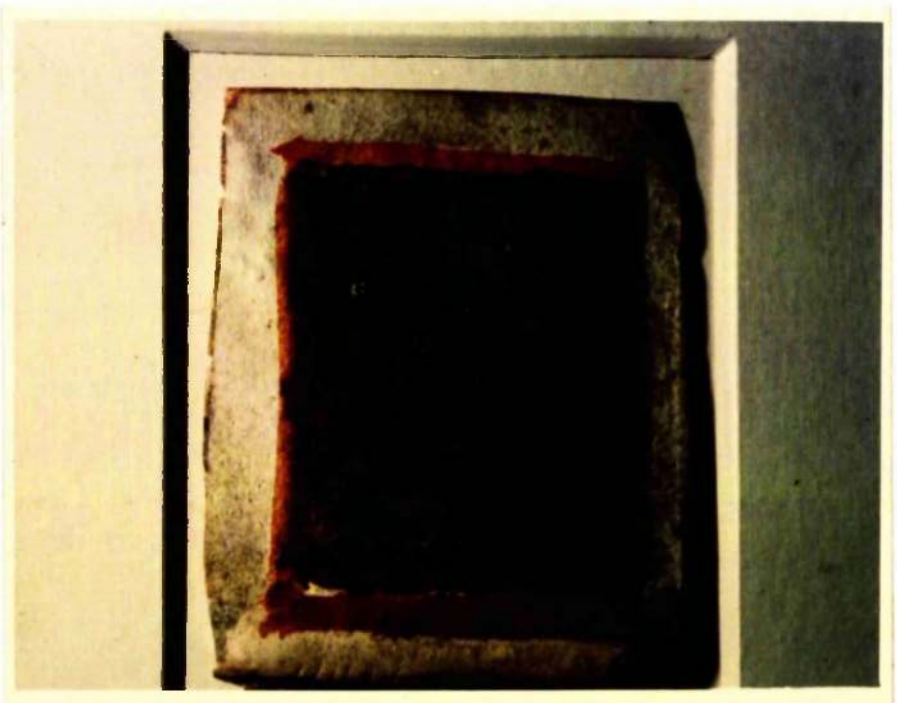
(Fig. 192) The Sudarium, German, Pasteprint, 15th c., S.2811z, 39:32 mm.



(Fig. 193) Pieta, German, Pasteprint, 15th c., S.2822b, 39:30 mm.

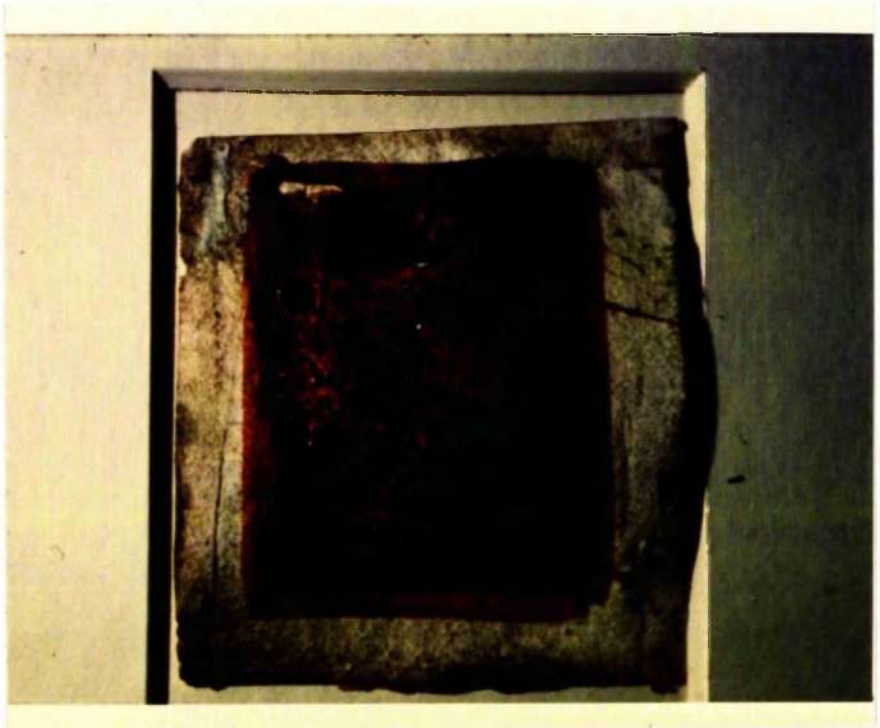


(Fig. 194) Madonna and Child, German, Pasteprint, S.2826a, 39:31 mm.

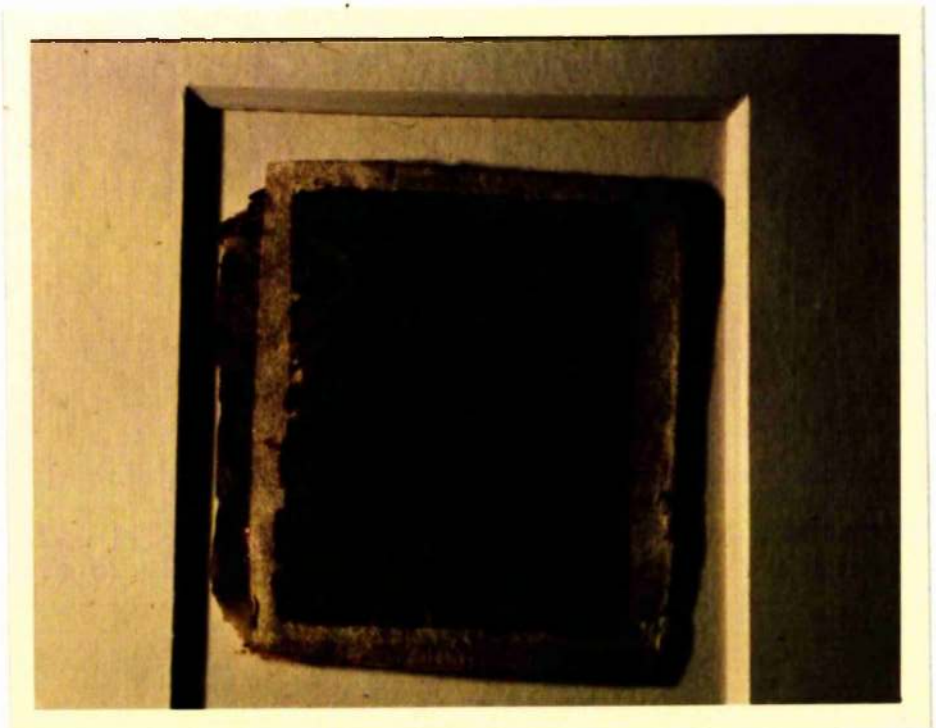


(Fig. 195) St. Margaret, German, Pasteprint, 15th c., S.2854d, 40:29 mm.

(Fig. 196) St. Catherine, German, Pasteprint, 15th c., S.2837a, 40:31 mm.



(Fig. 197) Unknown Female Saint, German, Pasteprint, 15th c., S.2861m, 40:30 mm.

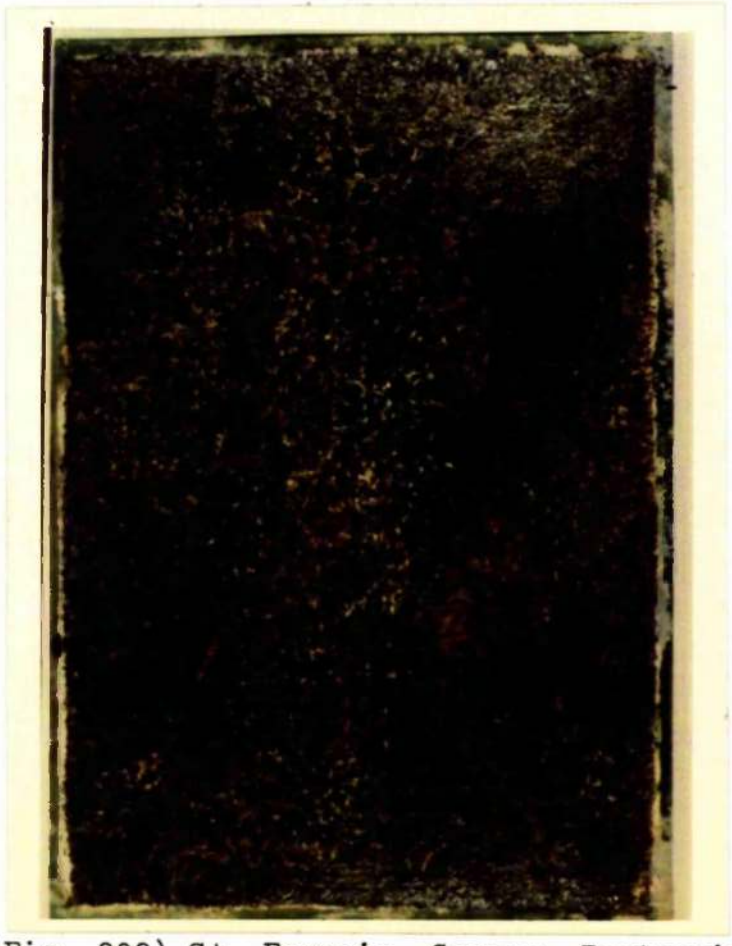


(Fig. 198) Unknown Female Saint, German, Pasteprint, 15th c., S.2861n, 38:32 mm.

(Fig. 199) St. George, German, Pasteprint, ca. 1470, S.2845a, 103:74 mm.

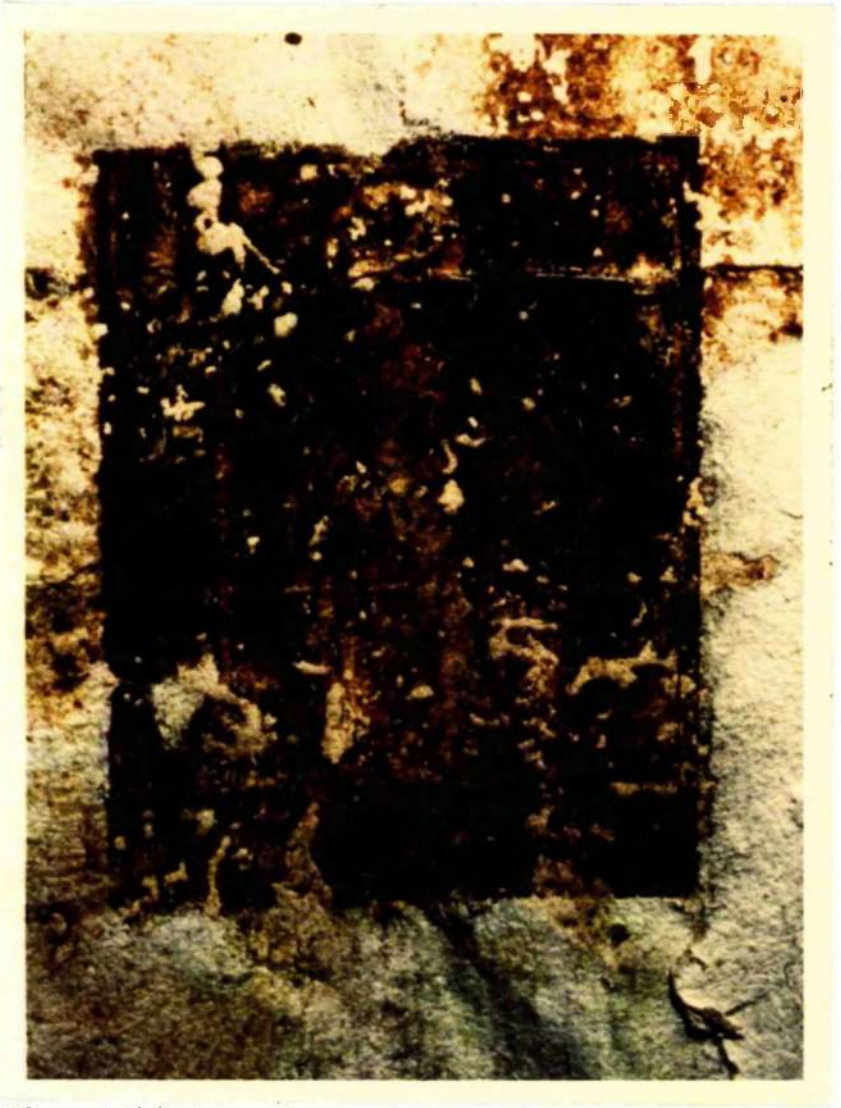
(Fig. 200) St. Michael, German, Pasteprint, 15th c., S.2856, 104:72 mm.

(Fig. 201) St. Catherine, German, Pasteprint, 15th c., S.2836a, 105:80 mm.



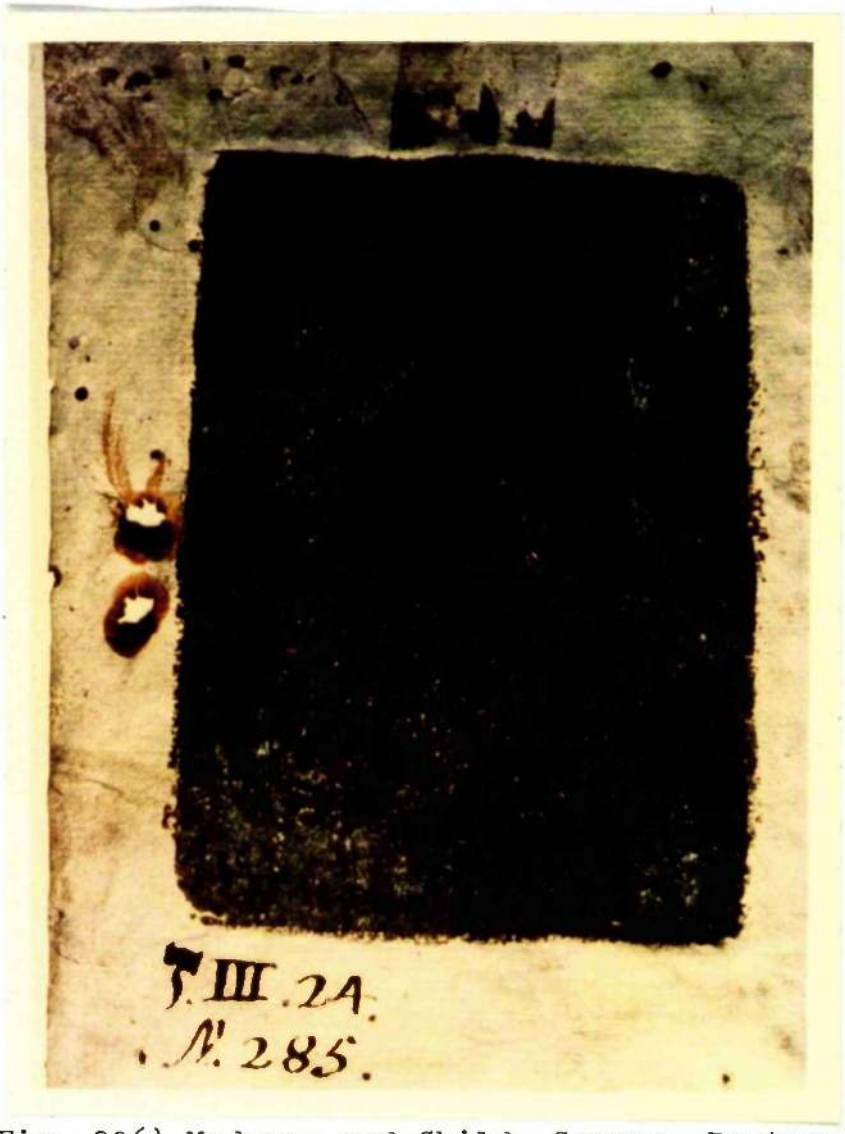
(Fig. 202) St. Francis, German, Pasteprint, ca. 1480, S.2843, 104:74 mm.

(Fig. 203) Christ Carrying the Cross, German, Pasteprint, ca. 1480, S.[IX. 2788m], 109:76 mm.



(Fig. 204) St. Catherine. German, Pasteprint, 15th c., S.[IX. 2837g], 51:39 mm.

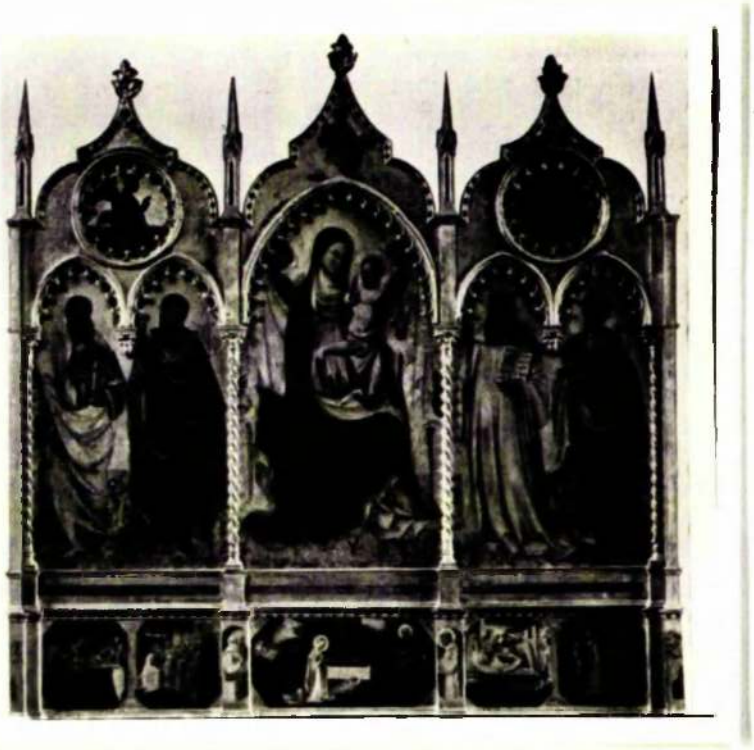
(Fig. 205) St. John the Baptist, German, Pasteprint, 15th c., S.2850m, 104:75 mm.



(Fig. 206) Madonna and Child, German, Pasteprint, 15th c., S.2824c, Paper, 107:155 mm; Paste, 100: 72 mm.

(Fig. 207) The Madonna and Child Enthroned with Four Saints, Northern Italian, Sealpasteprint, ca. 1450-1500, S.*2828m, 205:153 mm.

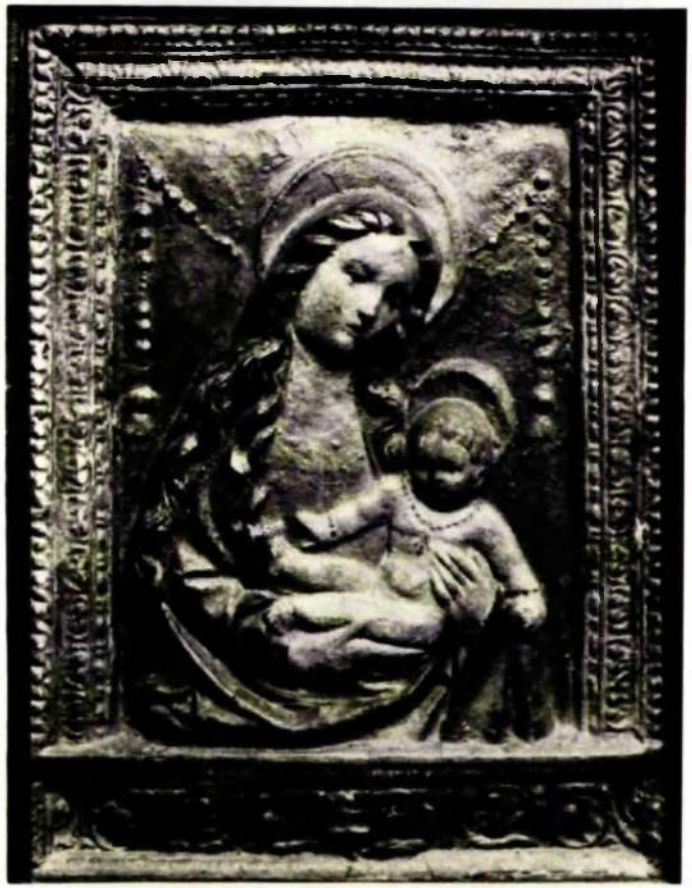
(Fig. 208) Madonna and Child Enthroned, Northern Italian, Fresco, Second half of the 12th c..



(Fig. 209) Madonna and Child Enthroned with Sts. Bartholomew, John the Baptist, Benedict, and Catherine, Andrea di Giusto, Polyptych, ca. 1435.

(Fig. 210) Madonna and Saints, Simone Martini, Polyptych, 1320.

(Fig. 211) Madonna dagli occhi grossi, Northern Italian, Fragment from an altarpiece, Second half of the 13th c..



(Fig. 212) Madonna and Child, Lombardy, Painted relief in papier mâché, ca. 1450-1500, 559:445 mm.

(Fig. 213) Madonna and Child, Florentine, Relief plaque in papier mâché, ca. 1450-1500, 545:340 mm.

(Fig. 214) The Lamentation, Siennese, Relief plaque in papier mâché, ca. 1450-1500, 560:450 mm.

(Fig. 215) Martyrdom of St. Sebastian, After Donatello, Bronze relief plaque, 15th c., 240:260 mm.

(Fig. 216) The Madonna and Child Enthroned, Southern Germany(?), Sealpasteprint, ca. 1450-1500, S.2824b, 85:65 mm.

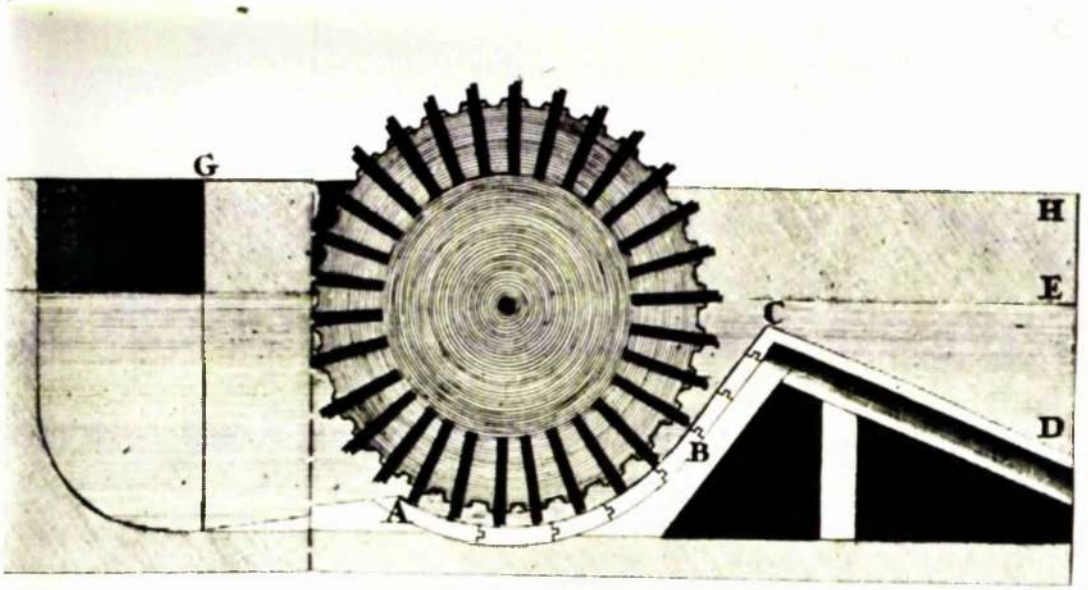
(Fig. 217) The Martyrdom of St. Catherine, German, Sealpasteprint, ca. 1475-1500, S.2863, Inscription, 140 mm diameter; Engraving, 87 mm diameter.

(Fig. 218) The Holy Family, Israhel van Meckenem, Engraving, ca. 1475-80, 247:170 mm.

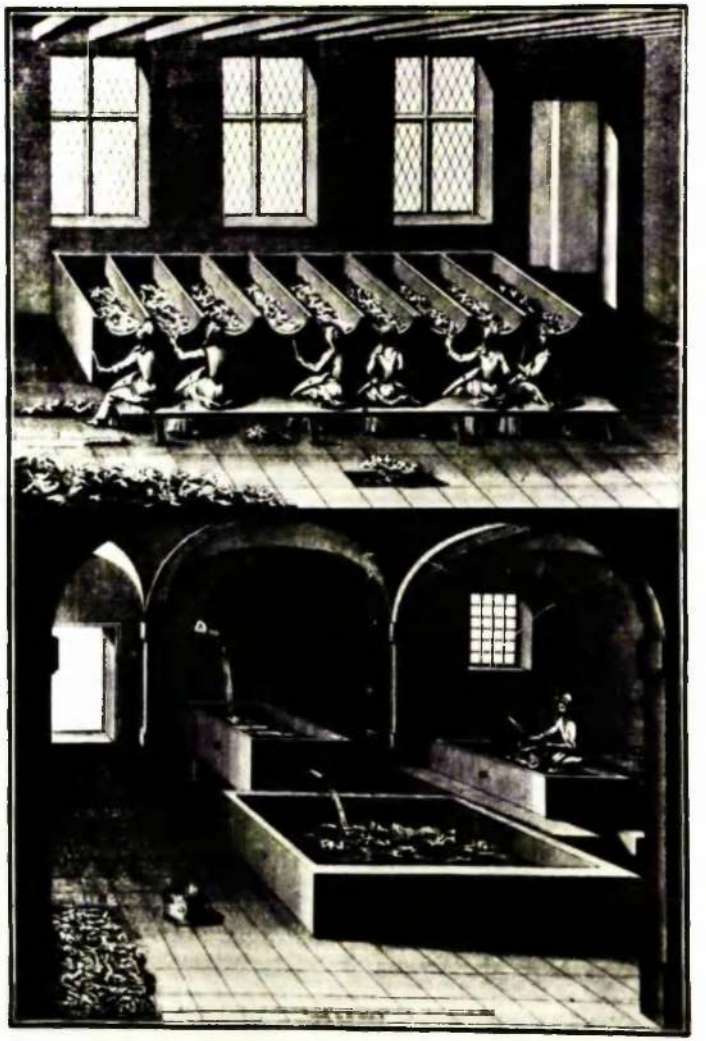
(Fig. 219) The Betrayal, Israhel van Meckenem, Engraving, ca. 1480, from Passion Series, 209: 147 mm.

(Fig. 220) "Dharani" printed prayer on paper, Japan, ca. A.D. 770.

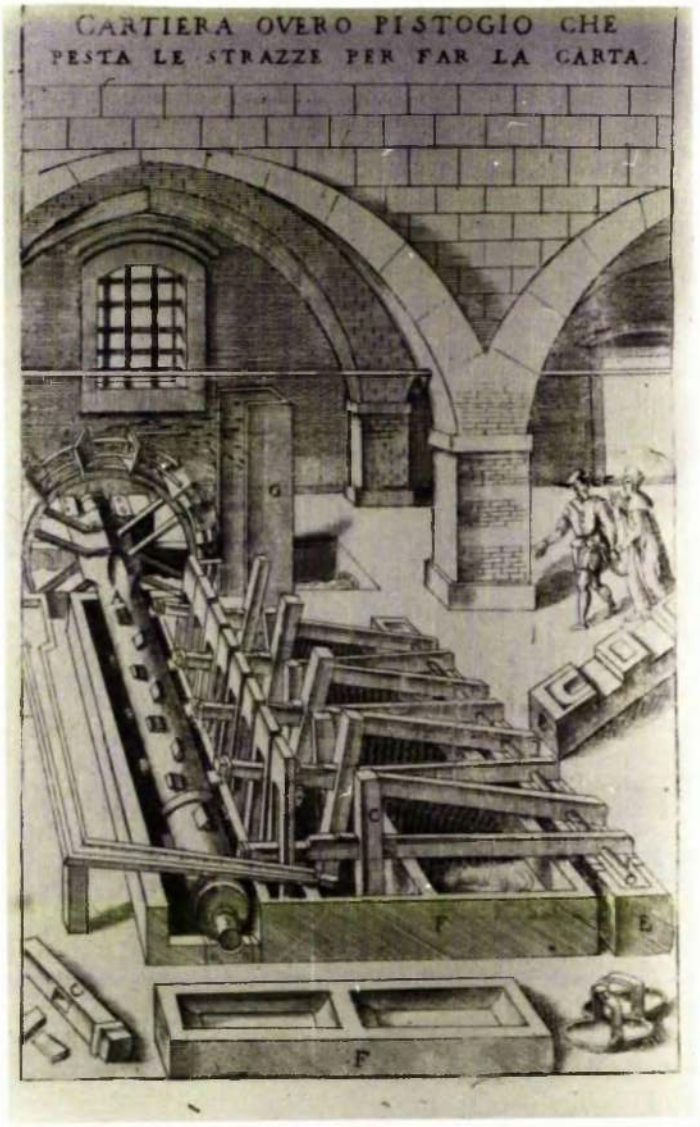
(Fig. 221) Goddess of Mercy, "Kuan-Yin", Chinese, Woodcut print on paper, A.D. 947.



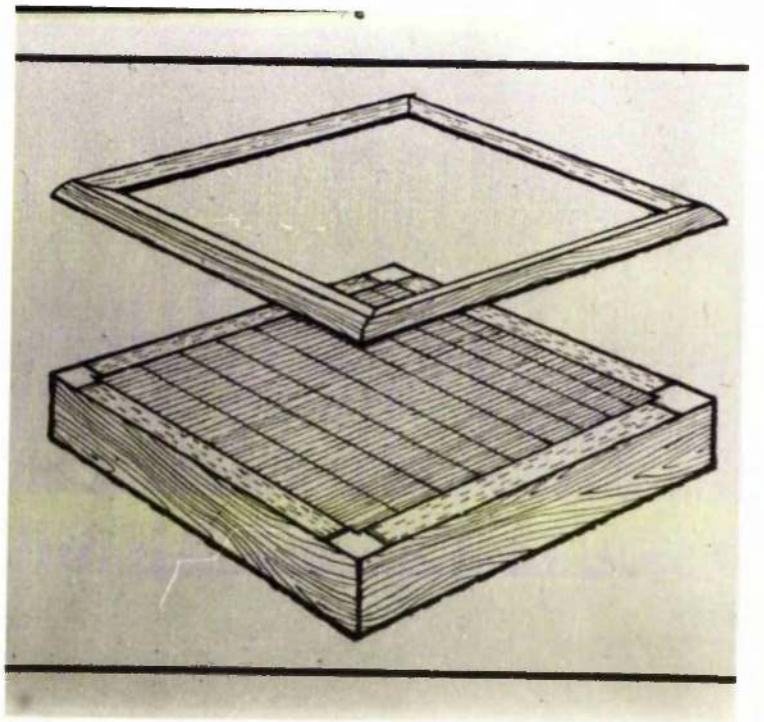
(Fig. 222) The Hollander Beater (diagram).



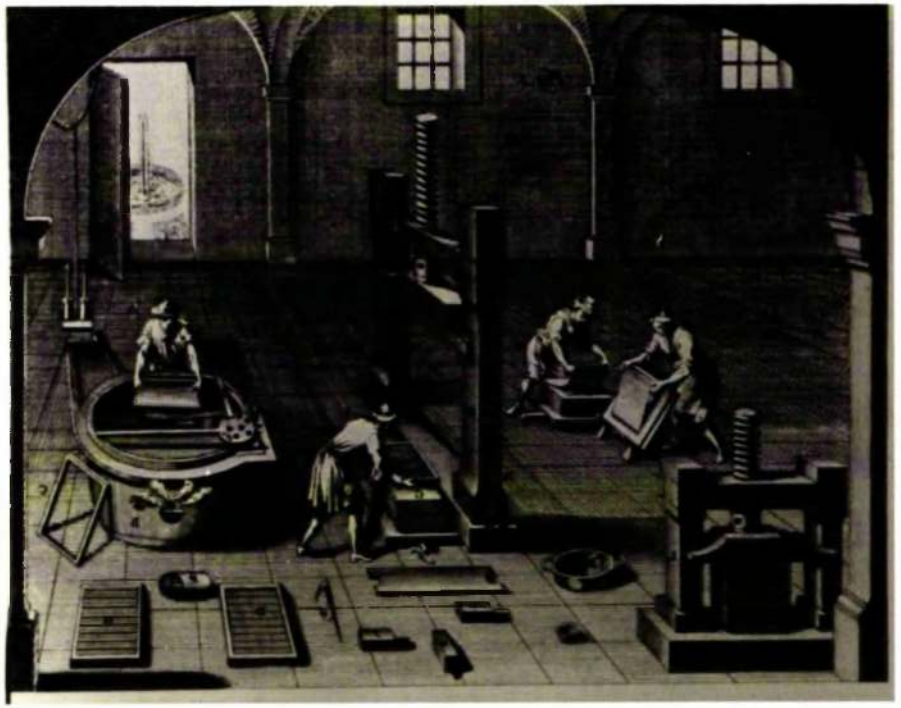
(Fig. 223) Sorting rags and fermentation, 16th c., Engraving, French.



(Fig. 224) Water-powered Stamper, 15th or 16th c.

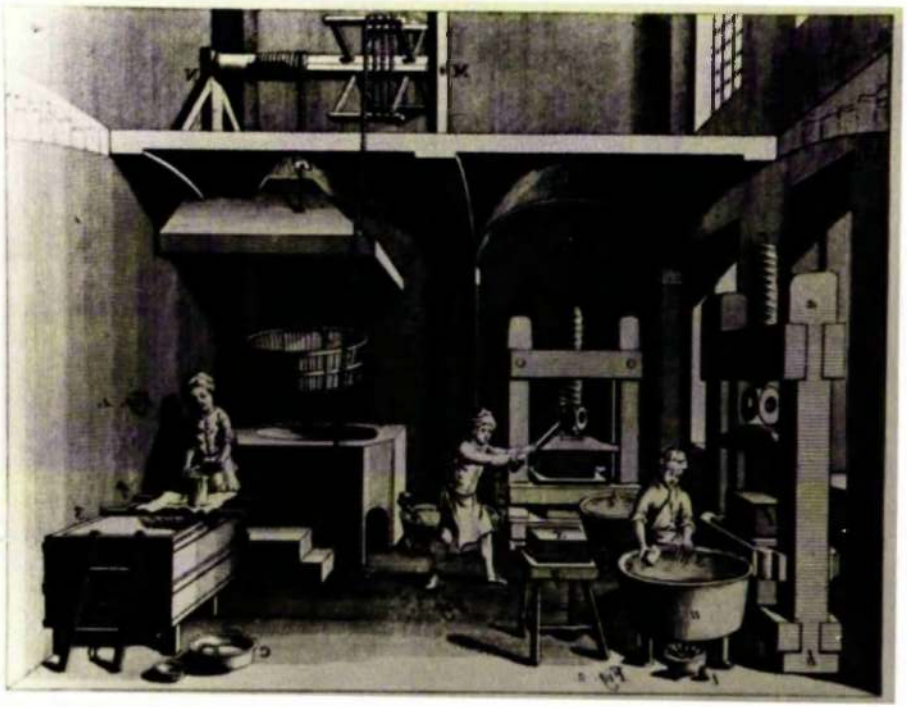


(Fig. 225) Paper mould with deckle raised (diagram).

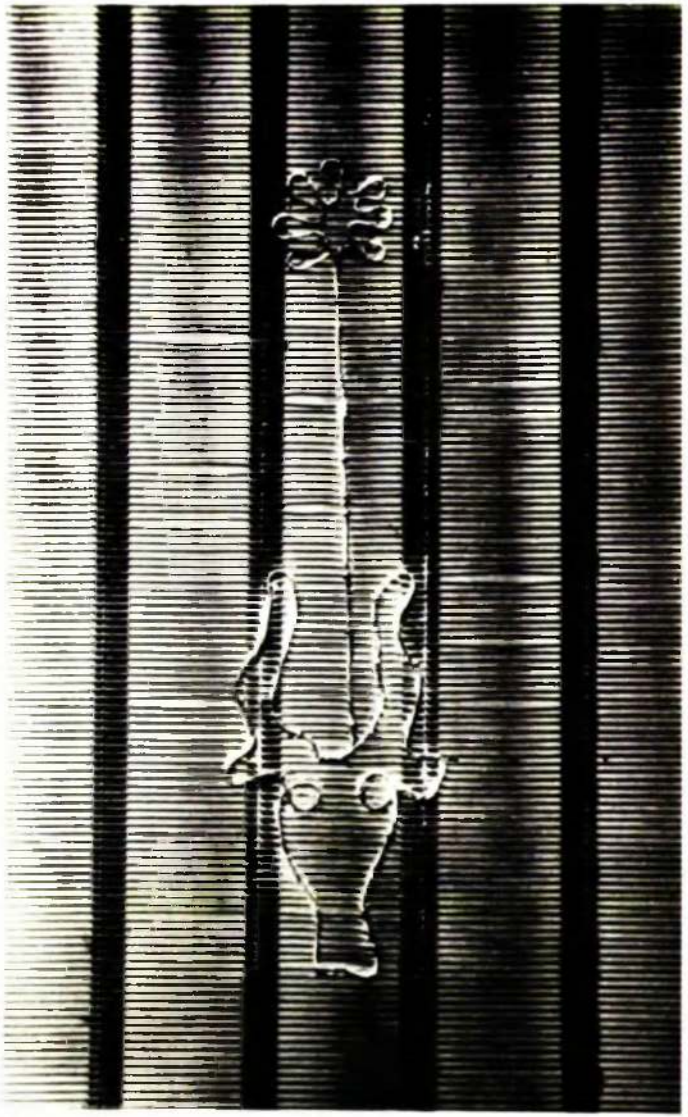


(Fig. 226) Making a sheet of paper; couching it; and pressing, 16th c., Engraving, French.

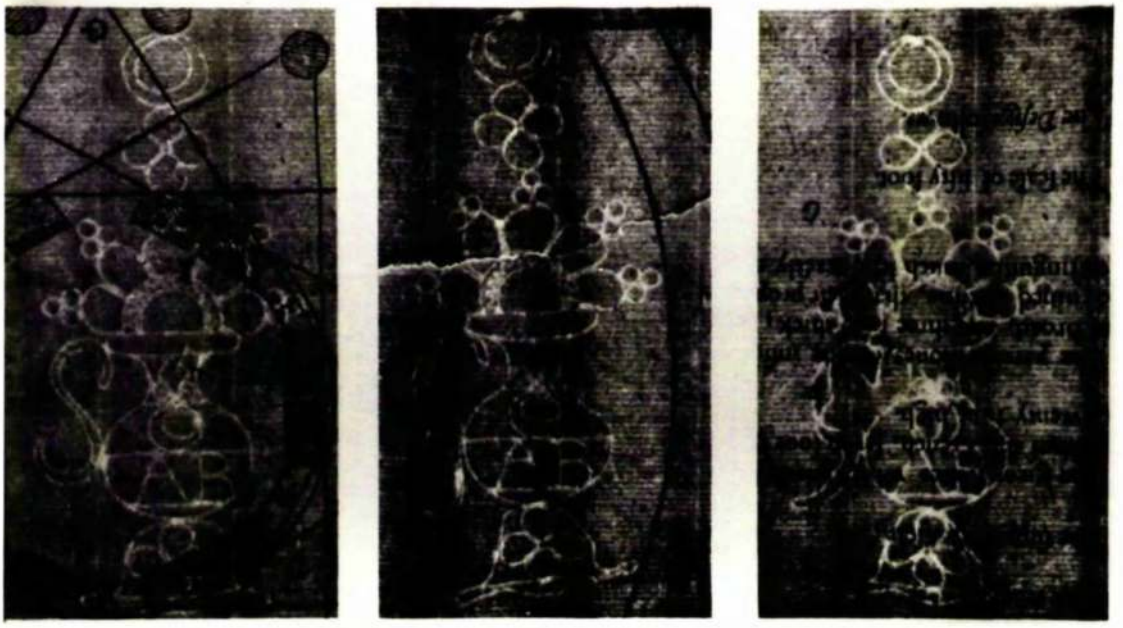
(Fig. 227) The drying loft in a 17th c. paper-mill, 17th c., Engraving.



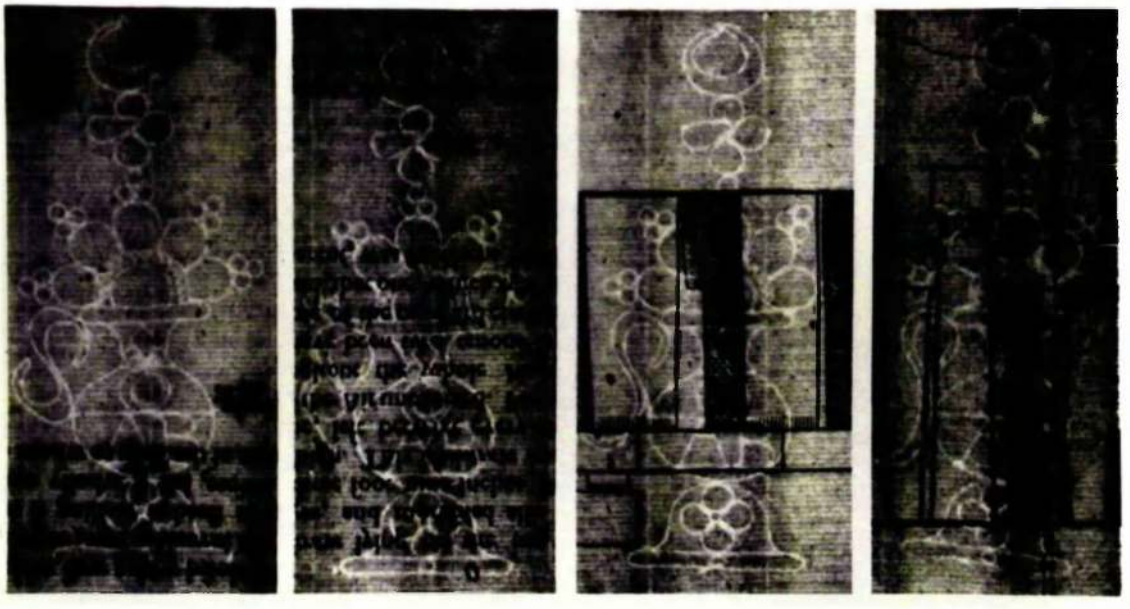
(Fig. 228) Sizing paper in a 17th c. paper-mill, 17th c., Engraving.



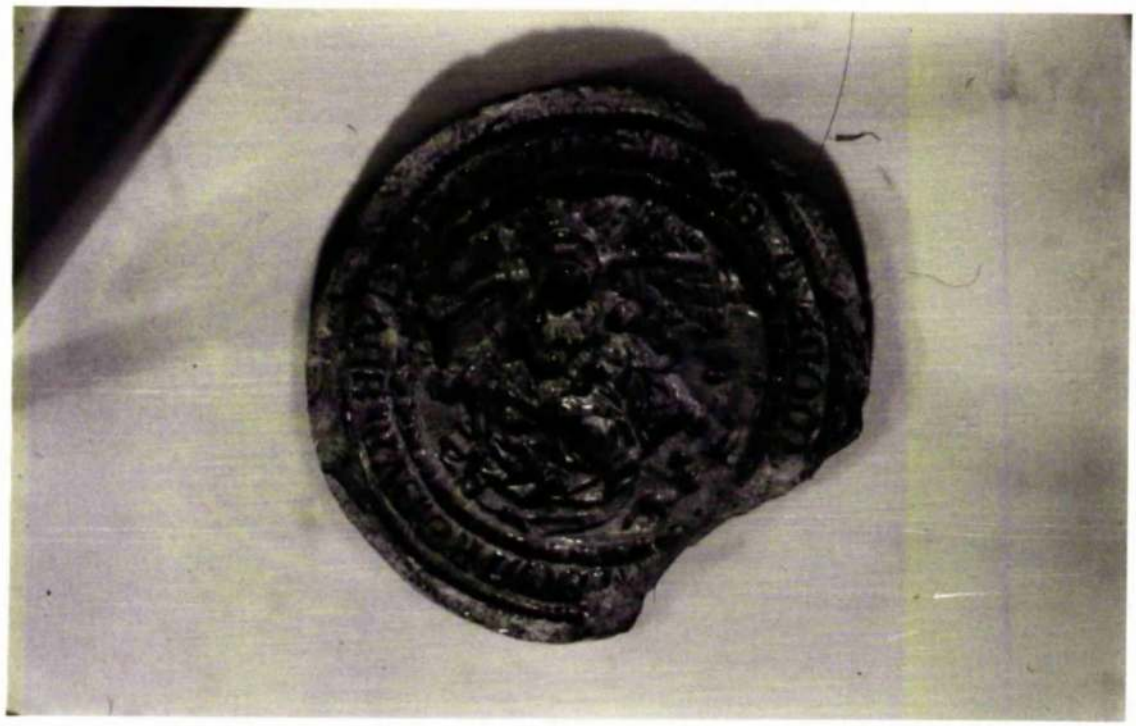
(Fig. 229) Wire Watermark Form on Mould.



(Fig. 230) "Twin Watermarks", Twin Pots Lettered C/AB.



(Fig. 231) "Twin Watermarks", Twin Pots Letteres C/AB (second group).



(Fig. 232) Wetting the matrix.

(Fig. 233) Laying the paper over the matrix.

(Fig. 234) Continued layering of paper.

(Fig. 235) Pressing the paper into deeply recessed areas.

(Fig. 236) Folding and moulding the paper to the surface.

(Fig. 237) Paper relief made from the "Markle Plaque".

(Fig. 238) Paper relief made from the "Markle Plaque".

(Fig. 239) Paper relief made from the "Markle Plaque".

(Fig. 240) A painted paper relief made from the "Markle Plaque".